WATER SUPPLY POLICY OF THE FEDERAL GOVERNMENT

(101-5)

HEARING

BEFORE THE

SUBCOMMITTEE ON WATER RESOURCES

OF THE

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION HOUSE OF REPRESENTATIVES

ONE HUNDRED FIRST CONGRESS

FIRST SESSION

APRIL 26, 1989

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WATER SUPPLY POLICY OF THE FEDERAL GOVERNMENT

WEDNESDAY, APRIL 26, 1989

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON WATER RESOURCES,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington, DC.

The Subcommittee met, pursuant to notice at 10:30 a.m., in Room 2167, Rayburn House Office Building, Hon. Henry J. Nowak, Chairman of the Subcommittee presiding.

OPENING STATEMENT

OF

HONORABLE HENRY J. NOWAK

CHAIRMAN

SUBCOMMITTEE ON WATER RESOURCES

HEARING ON

FEDERAL WATER SUPPLY POLICY

April 26, 1989

THIS MORNING THE SUBCOMMITTEE ON WATER RESOURCES MEETS TO RECEIVE TESTIMONY CONCERNING THE WATER SUPPLY POLICIES OF THE FEDERAL GOVERNMENT. WE WILL RECEIVE TESTIMONY FROM THE FEDERAL AGENCIES WHICH IMPLEMENT THE WATER SUPPLY POLICIES OF THE FEDERAL GOVERNMENT AS WELL AS DISTINGUISHED MEMBERS OF THE HOUSE AND OTHER INTERESTED PARTIES.

OUR COUNTRY HAS BEEN BLESSED WITH TREMENDOUS SUPPLIES OF FRESH WATER. UNFORTUNATELY, THIS HAS LED TO AN ATTITUDE WHERE WATER IS TOO OFTEN TAKEN FOR GRANTED EXCEPT IN TIMES OF CRISIS. FOR THE MAJORITY OF AMERICANS, THEY COMPLACENTLY TURN ON THE TAP AND GALLONS OF FRESH WATER FLOW FROM IT. THE WATER THAT FLOWS FROM THE TAP IS THE RESULT OF A VAST INFRASTRUCTURE OF PRIVATE AND PUBLIC FACILITIES THAT ARE CONSTRUCTED, OPERATED AND MAINTAINED IN ORDER TO ASSURE ADEQUATE

SUPPLIES OF WATER - ADEQUATE IN QUALITY AS WELL AS QUANTITY - TO SUPPORT OUR NATION'S ECONOMIC VITALITY AND, INDEED, TO MAKE POSSIBLE LIFE ITSELF.

WATER SUPPLY PROBLEMS ARE NOT NEW; PROBLEMS RELATING TO THE USE, OVERUSE AND ABUSE OF WATER HAVE EXISTED SINCE THE INCEPTION OF CIVILIZATION, PARTICULARLY IN ARID REGIONS. A GROWING POPULATION COMPETING FOR A LIMITED AMOUNT OF WATER HAS CAUSED THE PREVIOUSLY COMMON PERCEPTION OF CLEAN WATER AS AN UNLIMITED RESOURCE TO GIVE WAY GRADUALLY TO A MORE REALISTIC PUBLIC PERCEPTION THAT CLEAN WATER IS NO LONGER UNLIMITED AND NO LONGER FREE.

OUR COUNTRY IS FACING A GROWING AWARENESS OF WATER SUPPLY PROBLEMS. LAST YEAR'S DROUGHT IN THE MIDWEST CAME ON THE HEALS OF THREE YEARS OF INADEQUATE RAINFALL IN THE SOUTHEAST AND TWO YEARS OF REDUCED WATER SUPPLIES IN THE WEST.

DURING THE DEVELOPMENT OF THE WATER RESOURCES DEVELOPMENT ACT OF 1988, THE HOUSE OF REPRESENTATIVES INCLUDED TWO PROVISIONS CONCERNING THE COSTS TO BE PAID BY LOCAL INTERESTS AT THREE LAKES IN KENTUCKY. BECAUSE OF CONCERNS EXPRESSED BY THE SENATE AND THE ADMINISTRATION, THOSE PROVISION WERE DELETED IN CONFERENCE. HOWEVER, THE CONFEREES NOTED A CONCERN ABOUT THE INABILITY OF CURRENT COST-SHARING POLICIES FOR MUNICIPAL AND INDUSTRIAL WATER SUPPLY TO FULLY MEET THE NEEDS OF INDIVIDUALS PARTICULARLY IN LOW-INCOME AREAS AND PARTICULARLY WHERE THERE ARE EXISTING CORPS OF ENGINEERS RESERVOIRS WHICH COULD PROVIDE SUPPLIES OF MUNICIPAL AND INDUSTRIAL WATER WITHOUT SIGNIFICANTLY INCREASING FEDERAL COST OR ADVERSELY

AFFECTING EXISTING USES. IN ADDITION, CONGRESSMAN HOPKINS OF KENTUCKY PROPOSED TO CHANGE THE NON-FEDERAL SHARE OF WATER USED FOR MUNICIPAL AND INDUSTRIAL WATER SUPPLY FROM CORPS OF ENGINEERS RESERVOIRS TO 35 PERCENT TO MAKE IT CONSISTENT WITH AGRICULTURAL WATER SUPPLY PRICING. THAT PROPOSAL WAS WITHDRAWN, BUT THIS SUBCOMMITTEE AGREED TO A REVIEW OF WATER SUPPLY PRICING IN THIS CONGRESS.

FEDERAL WATER SUPPLY POLICY INCLUDES TWO ELEMENTS. THE FIRST ELEMENT IS WHAT IS THE APPROPRIATE FEDERAL AND NON-FEDERAL SHARE OF THE COST OF CONSTRUCTION FOR PROJECTS WITH WATER SUPPLY COMPONENTS. THE SECOND ISSUE IS WHAT IS THE BASIS FOR COMPUTING COSTS AGAINST WHICH A FEDERAL/NON-FEDERAL COST-SHARING FORMULA WILL BE APPLIED. THIS SECOND ASPECT IS PARTICULARLY IMPORTANT IN THOSE AREAS WHERE THERE ARE EXISTING RESERVOIRS WHICH WERE NOT ORIGINALLY CONSTRUCTED FOR THE PURPOSE OF WATER SUPPLY. AT TODAY'S HEARING WE HOPE TO HAVE A DISCUSSION OF BOTH OF THESE ISSUES.

BEFORE WE BEGIN WITH OUR FIRST WITNESS, I YIELD TO MY DISTINGUISHED COLLEAGUE THE RANKING REPUBLICAN MEMBER OF THE SUBCOMMITTEE, ARLAN STANGELAND FROM MINNESOTA, FOR WHATEVER OPENING REMARKS HE WOULD LIKE TO MAKE.

Mr. NOWAK. The Subcommittee on Water Resources will come to order.

This morning the Subcommittee on Water Resources meets to receive testimony concerning the water supply policies of the Federal Government.

We will receive testimony from the Federal agencies which implement the water supply policies of the Federal Government, as well as distinguished members of the House and other interested policies.

Our country has been blessed with tremendous supplies of fresh water. Unfortunately, this has lead to an attitude where water is too often taking for granted, except in times of the crisis.

For the majority of Americans they complacently turn on the tap and gallons of fresh water flows from it. The water that flows from the tap is a result of a vast infrastructure of private and public facilities that are constructed, operated, and maintained in order to assure adequate water supplies; adequate both in quality, as well as quantity, to support our Nation's economic vitality, and, indeed, to make possible life itself.

Water supply problems are not new. Problems related to the use, overuse, and abuse of water have existed since the inception of civilization, particularly in arid regions.

A growing population for a limited amount of water has caused the previously common perception of clean water as an unlimited resource to give away gradually to a more realistic public perception that clean water is no longer unlimited and no longer free.

Our country is facing a growing awareness of water supply problems. Last year droughts in the Midwest came on the heals of 3 years of inadequate rainfall in the Southwest, and 2 years of reduced water supplies in the West.

During the development of the Water Resources Act of 1988, the House of Representatives included two provisions concerning the costs to be paid by local interests at three lakes in Kentucky.

Because of the concerns expressed by the Senate and the Administration, these provisions were deleted in conference. However, the conferees noted a concern about the inability of current cautionary policies for municipal and industrial water supply to fully meet the needs of individuals, particularly in low income areas, and particularly where there are existing Corps of Engineers reservoirs which could provide supplies of municipal and industrial water without significantly increasing the Federal cost or adversely affecting existing uses.

In addition, Congressman Hopkins of Kentucky proposed to change the non-Federal share of water used from municipal and industrial water supply from the Corps of Engineers to 35 percent to make it consistent with agricultural water supply policy.

That proposal was withdrawn, but this Subcommittee agreed to a review of water supply pricing in this Congress.

Federal water supply policy includes two elements. The first element is, what is the appropriate Federal and non-Federal share of the cost of construction for projects with water supply components?

The second issue is, what is the basis for computing cost against which a Federal/non-Federal cost-sharing formula will be applied?

This second aspect is particularly important in those areas where there are existing reservoirs which were not originally constructed for the purpose of water supply.

At today's hearing we hope to have a discussion of both of those issues.

Before we begin with our first witness, let me yield to my distinguished colleague, the ranking Republican of the Subcommittee, Arlan Stangeland from Minnesota, for whatever opening remarks he wishes to make at this time.

Mr. Stangeland.

Mr. STANGELAND. Thank you, Mr. Chairman.

First of all, I would ask unanimous consent to the statement by Congressman John Paul Hammerschmidt, the ranking Republican of the full Committee to be made a part of the record.

Mr. NOWAK. Without objection, so ordered.

[Mr. Hammerschmidt's statement follows:]

OPENING STATEMENT OF

CONGRESSMAN JOHN PAUL HAMMERSCHMIDT

HEARING ON

WATER SUPPLY POLICIES OF THE FEDERAL GOVERNMENT

APRIL 26, 1989

10:00 A.M. - ROOM 2167 RAYBURN

TODAY, THE SUBCOMMITTEE WILL FOCUS ITS ATTENTION ONCE AGAIN ON WATER SUPPLY FINANCING. WE WILL HEAR TESTIMONY FROM THE ARMY CORPS OF ENGINEERS, THE BUREAU OF RECLAMATION, AND THE SOIL CONSERVATION SERVICE, AS WELL AS REPRESENTATIVES FROM THE STATES OF ILLINOIS AND NEW YORK AND THE CONFERENCE OF MAYORS. I WANT TO THANK ALL OF OUR WITNESSES. ALSO, I WANT TO EXTEND A WARM WELCOME TO CONGRESSMEN LARRY HOPKINS, CARROLL HUBBARD AND CHRIS PERKINS WHO HAVE BEEN INSTRUMENTAL IN BRINGING THIS MATTER BEFORE THE COMMITTEE.

AS YOU KNOW, THIS SUBJECT HAS BEEN ONE OF LONG-STANDING INTEREST TO THIS SUBCOMMITTEE. WHILE BUDGET CONSTRAINTS HAVE PREVENTED US FROM ESTABLISHING A COMPREHENSIVE NEW WATER SUPPLY LOAN PROGRAM AS HAD BEEN PROPOSED A FEW YEARS AGO, WE HAVE ATTEMPTED TO PROVIDE WATER SUPPLY OR WATER SUPPLY STORAGE FOR BOTH MUNICIPAL AND INDUSTRIAL NEEDS. THIS IS ORDINARILY UNDERTAKEN IN THE CONTEXT OF A MULTI-PURPOSE PROJECT WHICH MAY ALSO PROVIDE HYDROELECTRIC POWER AT REASONABLE COST TO AREAS WHICH NEED IT; FACILITATE TRANSPORTATION OF GOODS ALONG OUR COUNTRY'S NETWORK OF TRANSPORTATION WATERWAYS; PROTECT PUBLIC SAFETY THROUGH FLOOD CONTROL; AND, WHERE POSSIBLE, ENHANCE FISH, WILDLIFE AND RECREATION OPPORTUNITIES FOR THE PUBLIC.

OF PARTICULAR IMPORTANCE TO US ALL IS THE APPROPRIATE AND CONSISTENT ALLOCATION OF COSTS TO THE VARIOUS SEGMENTS OF THESE WATER PROJECTS AND THE REPAYMENT OF THESE COSTS IN A TIMELY MANNER. IT IS THE RESPONSIBILITY OF THIS SUBCOMMITTEE TO OVERSEE THE OPERATIONS OF THE ARMY CORPS OF ENGINEERS AS WELL AS THE SOIL CONSERVATION SERVICE WITH RESPECT TO WATER PROJECT MANAGEMENT. WHILE WE DO NOT HAVE OVERSIGHT RESPONSIBILITY OVER THE BUREAU OF RECLAMATION, WE NEED TO BE THOROUGHLY AWARE OF THE POLICIES AND PROGRAMS CARRIED OUT BY THESE AGENCIES WITH RESPECT TO WATER PROJECTS. WE CANNOT VIEW THESE THREE AGENCIES AS SEPARATE AND DISTINCT; SINCE THEY SHARE THE COMMON PURPOSE OF PROVIDING AND MANAGING WATER SUPPLY, WE MUST EXAMINE THEM FROM THE STANDPOINT OF THEIR SHARED RESPONSIBILITIES AND RESOURCES, AND THEIR COMMON GOAL OF MEETING OUR NATION'S WATER NEEDS.

Mr. STANGELAND. I also request that the statements of Congressman Bob Whittaker of Nebraska, and Congressman Jim Leach of Iowa as well be made a part of the record on this subject matter.

Mr. NOWAK. Without objection, so ordered.

[The statements of Congressman Whittaker and Congressman Leach follow:]

STATEMENT OF THE HONORABLE
BOB WHITTAKER
BEFORE THE
HOUSE PUBLIC WORKS
SUBCOMMITTEE ON WATER RESOURCES

HEARING ON WATER SUPPLY POLICY
AND THE CONCEPT PROPOSED IN
H.R. 1155

APRIL 26, 1989

THANK YOU MR. CHARIMAN.

THE WATER RESOURCES DEVELOPMENT ACT OF 1986 SET FORTH MANY NECESSARY GUIDELINES FOR THE ESTABLISHMENT AND PERPETUATION OF THE MANY NEEDED LOCAL WATER PROJECTS ACROSS THE UNITED STATES.

HOWEVER, ALONG THE WAY, LOCAL COMMUNITIES WERE LEFT BEHIND. WHILE FEDERAL WATER POLICY ALLOWS FOR THE DEVELOPMENT OF RECREATIONAL AND FLOOD CONTROL PROJECTS, THOSE THAT WOULD SERVE AS MUNICIPAL AND INDUSTRIAL WATER SUPPLIES PROJECTS HAVE BEEN EXCLUDED FROM FEDERAL CONSIDERATION.

AS A RESULT, MANY SMALL TOWNS AND RURAL AREAS LOCATED THROUGHOUT THE COUNTRY HAVE NOT BEEN ABLE TO FINANCE MUCH NEEDED WATER SUPPLY PROJECTS.

IN MY OWN DISTRICT, THERE HAS BEEN AN ON-GOING EFFORT TO OF NEARLY 25 YEARS TO BUILD A PROJECT THAT WAS ORIGINALLY AUTHORIZED FOR CONSTRUCTION IN 1965. THIS BILL MAY VERY WELL BE THE LAST BEST CHANCE FOR COMPLETION OF THIS AND OTHER LIKE PROJECTS AROUND THE COUNTRY.

I BELIEVE H.R. 1155 WILL GO A LONG WAY TOWARDS ADDRESSING THIS CRITICAL NEED AND CORRECTING THIS INEQUITY. I URGE THE SUBCOMMITTEE TO TAKE A VERY CLOSE LOOK AT THE NEEDS FOR H.R. 1155, AND I LOOK FORWARD TO WORKING WITH THE WATER RESOURCES SUBCOMMITTEE IN THEIR EFFORTS TO RECONCILE THIS GREAT INJUSTICE.

JIM LEACH

IOWA'S CONGRESSMAN
FOR THE FIRST DISTRICT

Statement by

Congressman Jim Leach

before the

Subcommittee on Water Resources
of the
Committee on Public Works and Transportation
U.S. House of Representatives

April 26, 1989

Mr. Chairman, thank you for the opportunity to submit testimony to your subcommittee in support of H.R. 1155, legislation to amend the Water Resources Development Act of 1986 to provide Federal cost sharing for water supply projects.

As you know, this measure would amend present law to establish a 65-percent federal cost-sharing formula for water supply projects. As you also know, current water policy focuses exclusively on flood control and navigable waterways by making only projects of these sorts eligible for federal cost-share participation. The inclusion of water supply projects in this policy called for by H.R. 1155 is badly needed.

Many Members from the Midwest and West can attest to the water shortage crisis the country is facing. In Iowa, particularly in the southern and eastern parts of the state in which my District is located, the severity of the situation grows almost daily.

One measure of the extreme nature of the problem is the extraordinary demand being placed on the Farmers Home Administration, at present almost the only source of Federal support for water supply projects. The FmHA's water and waste disposal funding allocation for Iowa for fiscal year 1989 is $4.9 million in loan funds and $1.5 million in grant funds. At present, the state has on hand preapplications for projects requiring over $42 million in loans and $16 million in grants. The majority of these projects are drought related and many are for regional water systems that (1) need to improve their present water supply -- delivery-storage facilities or (2) have requests to expand their facilities to water-short rural residents and small communities.

Harder to quantify but equally real is the human suffering being caused by the water shortage and the potential for lasting economic damage it entails. The wells on many farms are going dry or becoming polluted and farmers are increasingly being forced to resort to such extreme measures as trucking water for livestock or selling off herds because they cannot provide water for them. The infrastructure of small towns is quite literally in danger of drying up.

It is clear that additional federal funds are going to have to be forthcoming if this mammoth problem is to be adequately addressed. The expansion of our national water policy proposed by H.R. 1155 is a logical step forward in bringing the needed resources to bear on this ongoing crisis. I hope the Subcommittee on Water Resources will give the bill every consideration.

Again, thank you for the opportunity to submit testimony on this most pressing issue. The Subcommittee's attention to the country's water shortage difficulties is appreciated.

* * * * *

Mr. NOWAK. I also have, for the record, statements from Congressman Mazzoli from Kentucky and from Congressman Costello from Illinois.

[The statements of Mr. Mazzoli and and Mr. Costello follow:]

STATEMENT OF

THE HONORABLE ROMANO L. MAZZOLI

BEFORE THE SUBCOMMITTEE ON WATER RESOURCES

HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

U.S. HOUSE OF REPRESENTATIVES

APRIL 26, 1989

Mr. Chairman:

I want to thank you and the other distinguished Members of this panel for allowing me to submit a statement in behalf of H.R. 1155, the Water Supply Development Assistance Act, which was crafted by my good friend and respected Member of Kentucky's Congressional Delegation, Larry Hopkins, and of which I am an original sponsor.

In recent years, drought conditions and increased pollution of our nation's waters have seriously hampered the access many regions have to adequate water supply sources. Unfortunately, current federal policy does not provide for funding for water supply projects which would overcome shortages due to drought and pollution. Instead, federal assistance is limited only to efforts to develop flood control and navigational water systems.

What my colleague has set out to do in H.R. 1155 is to address this gap in federal assistance by providing support for municipal and industrial water supply development projects

through a cost sharing program. H.R. 1155 would establish a funding ratio of 65% federal and 35% state and local cost sharing for the water supply component of multi-purpose civil works projects.

Understandably, with the federal deficit situation as it is, federal spending must be curtailed where possible and carefully scrutinized where necessary. I don't believe H.R. 1155 seeks to increase federal spending. Rather, it seeks to provide federal assistance -- which is available for other water disasters and crises -- to areas which are seriously threatened by inadequate water supply.

Mr. Chairman, I commend you for scheduling hearings on this bill so early in the 101st Congress and hope that you and the other Members of this panel will favorably report H.R. 1155.

OPENING STATEMENT
BY U.S. REP. JERRY COSTELLO
SUBCOMMITTEE ON WATER RESOURCES
APRIL 26, 1989
"THE WATER SUPPLY OF THE FEDERAL GOVERNMENT"

Today our subcommittee will have the opportunity to hear from several witnesses regarding the water supply of the federal government.

Several municipalities in my district have sought the assistance of the Army Corps of Engineers in securing safe drinking water. One in particular, the town of Breese, has requested the help of the Corps in getting a line from a nearby lake for their use.

Mr. Chairman, I only point out this example to note that many small communities in Illinois need these additional resources in the event of a drought like we saw last summer. In addition, other areas of my district will be protected by the Metro East Sanitary District's recently-passed initiative which secured a local commitment for federal assistance against floods along the Missippi River.

In addition, the Corps vital work on locks and dams along the Mississippi has protected our area and has adequately regulated our water in Southwestern Illinois. I look forward to hearing from today's witnesses and their input on this issue.

Mr. NOWAK. You may resume, Mr. Stangeland.

Mr. STANGELAND. Mr. Chairman, I want to commend you for convening today's hearing on water supply policies of the Corps and other Federal agencies.

As you and I both know, and as our colleagues particularly from Kentucky know, water supply is an emerging and at times controversial issue.

We may want to explore several aspects of water supply generally. For example, what is the proper Federal role in providing or facilitating an adequate supply of water for municipal and industrial purposes? Is it good policy to distinguish between domestic and agricultural water supply projects? Should the Corps, the Bureau of Reclamation, the Soil Conservation Service, and other agencies have more consistent policies?

Perhaps more importantly we need to look at cost-sharing and cost allocation policies. Are they fair? Does it make sense to require local sponsors to pay the Corps 100 percent for municipal and industrial water supply projects and 35 percent for irrigation projects? Does current law adequately recognize a community's ability to pay?

Rural communities across America face increases challenges to find and pay for clean, drinkable water. What can the Federal Government do to help? Any answer to this question must take into account today's fiscal realities and constraints.

I also recognize the Corps' basic mission has been and should continue to be navigation and flood control. And yet, there is a real need for some limited Federal assistance for water supply projects.

This makes even more sense when surplus water at a Federal project can be made available in a cost effective and equitable way. We need to explore opportunities that make use of existing water supplies.

Finally, Mr. Chairman, any comprehensive discussion of water policy should address emergency assistance authorities. Last year's drought reminds all of us how much we take this precious resource for granted. Rural communities in particular are vulnerable to crippling droughts or contaminated water supplies, both in the surface and underground aquifers.

Are the Corps' existing authorities adequate to respond to a community's emergency needs?

Mr. Chairman, for all of these reasons I am very pleased that the Subcommittee is beginning a broad review of water supply policies. By exploring some of these questions today we can help address ongoing concerns and future problems.

I look forward to hearing our witnesses today, and I thank you very much, Mr. Chairman, for calling the hearing on this subject.

Mr. NOWAK. Thank you, Mr. Stangeland.

We will now proceed with our first witness. I understand Mr. Hopkins would like to appear at a later date, along with the Mayor of Lexington. So we will defer his testimony and turn now to the Honorable Carl C. Perkins, a member of this Committee and a member who has been very concerned and expressed his great interest in this subject last year.

And certainly it was one of the principal reasons we are having this hearing today was because of his interests and because of his

constituents who were faced with this somewhat contradictory Federal policy adversely that we are here today to try to review, as we said we would last year when he consented to remove the matter from last year's Bill because of the Administration's concern about it breaking into new ground.

But certainly we want to welcome Carl Perkins before the Committee so we will have a clear record to move forward on this matter in the future.

TESTIMONY OF HON. CARL C. PERKINS, A REPRESENTATIVE IN CONGRESS FROM KENTUCKY; HON. LARRY J. HOPKINS, A REPRESENTATIVE IN CONGRESS FROM KENTUCKY; AND HON. SCOTTY BAESLER, MAYO, CITY OF LEXINGTON, KY

Mr. PERKINS. Thank you, Mr. Chairman.

It is indeed a pleasure to be here and have all of you Committee members present so we can talk about something that is very important to me, and I think increasing important in a nationwide sense.

I want to thank you allowing me to appear and discuss the involvement of the Corps of Engineers in providing municipal water supplies.

As you know, I am from an area in the country in the heart of Appalachia, which has very little tax base and substantial numbers of those living in poverty.

Over the past several decades, through programs authorized by this Committee such as the Appalachian Regional Commission, the Economic Development Administration, and numerous other programs, the poverty rate has been cut in half, although it is still substantially above the national average, and in most cases doubles the national average.

Although substantial progress has been made, one of our unmet needs is the provision for safe drinking water for our people.

My area of Kentucky is one of the most heavily populated areas classified as rural in the United States. The provision of drinking water is also complicated by having to pump it over mountains.

What we have done is established large water treatment plants and run lines out from them into unincorporated areas. While thousands have been served in this manner, tens of thousands more need to be served.

Now the problem that we are facing is that the rivers from which we are drawing water are inadequate to meet the need. Several communities, with whom I have been working to extend lines, are reaching the minimum low flow capacity of withdrawing water from these rivers.

Now in order to meet the need, an additional supply has to be found. In Eastern Kentucky we are in the very fortunate position of having that additional supply already on hand, but using that supply is rendered impossible by current law.

Let me explain. In Eastern Kentucky over the years a series of flood control reservoirs have been built which had as part of their authorized purposes the maintenance of minimum low flow in the rivers.

These reservoirs have performed extremely well. Many of them were constructed many years ago. Dewey Reservoir in Floyd County was completed in the late 1940's. Grayson Reservoir in Carter County was completed about 20 years ago, and Carrs Fork Reservoir in Perry and Knott counties and a little bit of Letcher County was completed about 15 years ago.

Three communities near these reservoirs are rapidly reaching, or have reached, the minimum low flow from which they can withdraw water from these rivers.

The City of Grayson a little over a year ago had a proposal to withdraw water in the amount of 2 million gallons per day from Grayson Reservoir in order to expand their plant capacity and serve unincorporated areas of Carter County, and even serve the Oldtown area of Greenup County.

The City of Grayson currently draws its water from the Little Sandy River downstream from the Grayson Reservoir. This river did not have the capacity to support the proposed expansion.

The City of Grayson went to Huntington District Office of the Corps of Engineers, which has jurisdiction over the Grayson Reservoir. The city's proposal was to put a raw water intake in through the Grayson Reservoir at the city's expense with the design to be approved by the Corps of Engineers.

The Corps determined that this could be done without any adverse impact on the flood control mission of the Grayson Reservoir. The city was willing to pay the annual operation and maintenance costs of the Grayson Reservoir solely attributable to maintaining this storage capacity for their water supply.

The problem occurred because of the provisions of current law, which require that the City of Grayson to pay that portion of the cost of construction of the Grayson Reservoir attributable to providing this storage capacity indexed for inflation.

This amount came to about $800,000. This cost killed the expansion. The area to be served had an unemployment rate, and still does, of between 18 and 20 percent. It had a poverty rate in excess of 20 percent. This additional cost purely and simply killed the project.

I might add that surveys in the area show that the well water is contaminated. The City of Prestonsburg in Floyd County is working with county officials to extend water lines throughout Floyd County. Prestonsburg draws its water from the Levisa Fork of the Big Sandy River.

They can withdraw water from the river, up to 4 million gallons per day. However, as a part of the planned expansion that we want to do throughout Floyd County, the City of Prestonsburg needs a supply of 6 million gallons per day.

Now nearby is Dewey Lake, which was completed in 1948-49 at a total cost of approximately $8 million. Although I do not have the final figures, it is estimated that the City of Prestonsburg, in order to utilize Dewey Lake, a 40 year old lake for 2 million gallons a day, would have to pay up to $6 million to $7 million.

Floyd County has a poverty rate of about 25 percent and an unemployment rate of around 15 percent. It cannot afford this cost. You are talking about a very small town in most of these situa-

tions, Gentlemen. Floyd County probably has the largest town and that is about 5,000 people in that city, not a big town.

The City of Hazard was working on a similar proposal over in Perry County to provide services to unserved people in five other rural counties. Population areas unserved contained about 80,000. The poverty rate of the affected area is also around 25 percent with unemployment rates ranging up and over 20 percent.

The City of Hazard currently withdraws water from the North Fork of the Kentucky River, and is seeking additional capacity from Carrs Fork Reservoir, completed about 15 years ago at a cost around $45 million. The pay back would be prohibitive.

In each of these three instances these reservoirs were built many years ago and have been bought and have been paid for. They can provide water storage capacity with no adverse impact on their flood control missions. The extra operation and maintenance costs are minimal. There is no earthly reason why these communities should be required to pay for a portion of these already completed reservoirs.

I would, therefore, propose the following solution, which would entail no expenditure of money by the Corps of Engineers. I would propose that where there is a Corps of Engineers reservoir in which water was impounded at least 10 years ago and which the area to be served by the expanded water system has a poverty rate in excess of 15 percent, that the repayment provisions be waived.

I would further propose that this waiver of repayment be limited to systems operated on a not for profit basis under the laws of the appropriate state. The municipal systems would have to pay for the cost of putting in the raw water intake with the design to be approved by the Corps of Engineers to ensure that the purposes of the lake are not diminished, and that they pay, as is under current law, the annual operations and maintenance costs attributable to the storage of this water.

Now as the Subcommittee knows, I was very much opposed to the cost-sharing provisions of the 1986 Water Bill. It would seem to me, however, that my proposal is consistent with provisions of the 1986 Bill which provide for a reduction payment for flood control projects for poor communities.

I am in the process of having my proposal put into legislative language. I think it is a modest proposal, but a reasonable one which will not cost the Corps of Engineers one red cent.

I do not believe it makes any sense to make these communities pay for a part of a reservoir which has already been built and already been paid for. There is no rational reason for such policy.

In order to meet the argument that a community might try to build a flood control reservoir and right after it is completed use it for the municipal water supply, I have made the proposal that the lake involved must have been water impounded at least for 10 years. The 10 year figure seems to me to be reasonable.

We all know how long it takes to get one of these reservoirs constructed. From the time an authorization is first proposed until actual construction begins generally is a minimum of 8 years, and sometimes longer.

Once construction begins, and by that I mean when starting the land acquisition, it may be another 5 to 7 years before it is complet-

ed and water is impounded. This would mean that there would be a period of 13 years from the time an authorized project is proposed until water is impounded, and an additional 10 years before it would be eligible for this waiver provision, if the area to be served met the poverty criteria.

I believe this meets the possible objection of using the Flood Control Program as a subterfuge for a municipal water supply.

I believe that based on my experience from working with poverty based formulas, which I have done quite a bit of, that probably the best criteria of an inability to pay is the poverty rate. This is a figure that is readily available and it is widely accepted.

A poverty rate of 15 percent is overwhelming evidence that the community has substantial numbers of poor people. It is also a strong indication that the unemployment rate as a general rule is quite high in comparison to the national average.

It is furthermore indication that many of those who are working as a general rule are in relatively low wage jobs, either at or a little above the minimum wage.

I hope that the Subcommittee will be able to include my proposal in the Water Resources Bill, which it hopes to produce later in this Congress.

I look forward to working with you and the members of the Subcommittee. And once again, I would like to thank you for the opportunity of appearing before you this morning.

Thank you, Mr. Chairman.

Mr. NOWAK. Thank you very much, Congressman.

I wonder if you have looked at this in Kentucky, there are other areas that would be able to come under your very limited exemption that you have outlined in your testimony?

Mr. PERKINS. Are there other areas?

Mr. NOWAK. Are you aware of other areas or other——

Mr. PERKINS. Specifically, actually the only three proposals that we have had are the ones that I have indicated in my testimony. Now there very well may be other areas perhaps in Congressman Hubbard's district, I would not know.

But I would suspect that nationwide that this situation would be—I think it is consistent with the cost sharing provisions that what we are trying to do here is essentially say that there is not a big local tax base. There is a small—and most of these towns I said are very small, but we are trying to build a municipal water supply that stretches out into these rural counties.

And in order to do that we have to have some agency to do that, and that is normally the biggest city in the area. And we are trying to build big water plants there and then serve people by extending the water lines out.

I am having well contaminations of 75 to 80 percent in my district, which is just unbelievably high, and these people are ingesting regularly types of bacteria that are very, very detrimental to their long term health. We have problems because of bad drinking water.

What we are trying to do is just take advantage of available clean drinking water supplies here, and communities just cannot pay this prohibitive cost. They are small communities.

So all we want to do is to try to get into a situation where these communities can do the project consistent with guidelines and to get a position where that we can finally allow these communities to have clean drinking water, and I am sure that this will be applied nationwide.

I think it is consistent with the proposal for cost sharing because I feel that in the Bill—when I was talking with Bob Roe when he was Chairman of this Subcommittee I guess a number of years ago, one of the things that he put in because of one of my constant insistence was something to do and help those areas that have high poverty rates because they cannot tax their local people and they cannot do bond issues to the degree that other areas can do.

And that is what the situation is here. These are poor communities, and we just have to have some way that they can get at this water supply.

I know I am just repeating a lot of the things that I have already said, but I feel very strongly on this issue.

Mr. NOWAK. Let me ask you one other question that has come up. You know the original purpose for which the dam was constructed in your area I assume was flood control to a large extent.

Mr. PERKINS. That is correct.

Mr. NOWAK. Other areas were multi-purpose constructed, and I am wondering if you have had an opportunity to talk to the local officials if there was any kind of feedback as to what they considered or could be an invasion of that original purpose, and is there a true consensus about using this water, or would there be any objection, do you think, from any part of your affected area?

Mr. PERKINS. Well, I cannot speak for other areas where the situation is occurring, but I can speak for local communities that I testified about, the three local communities here. They were the ones that came to me essentially with the proposal, and they are the ones who are suffering because of lack of drinking water.

I think there is unanimity in terms of their local attitudes towards this proposal. They want clean drinking water. This regulation or this law is stopping them from having it. If we can change it, we will have an opportunity to have clean drinking water. Everybody wants clean drinking water. It is as simple as that.

So I do not anticipate any problems from local communities. We have included provisions, at least in this proposal, that the Corps of Engineers has got to say that there is no adverse impact on its flood control situation.

I cannot see with that type of criteria how we should have any problems from local communities.

Mr. NOWAK. And it is true that the local commitment would be the cost of the tap itself as well as the filtration of that water and the distribution of that water throughout these communities.

Mr. PERKINS. That is correct, Mr. Chairman.

Mr. NOWAK. There is no other Federal involvement at that stage. Is that correct?

Mr. PERKINS. That is correct, Mr. Chairman. All we are asking is that the money that is being—that would be charged for a dam that has been completed for years, that a community not be charged for building that dam that has been completed for years.

That is all we are asking, and that seems a very reasonable proposal from almost any perspective.

Mr. NOWAK. I thank you very much. I wonder if I could just in order to accommodate Mr. Hopkins, who has also entered this room I think with the Mayor of Kentucky, ask you to join your colleague, Mr. Perkins. And we will withhold the individual questions until we have their testimony as well as Mr. Hubbard, if he does arrive.

And if we could ask Congressman Hopkins, if you want to bring the Mayor to the witness table. We are going to take the Mayor out of order because of a plane commitment he has.

I want to introduce, of course, the Honorable Larry Hopkins of Kentucky, along with Mr. Hopkins from the U.S. Conference of Mayors, the Honorable Scotty Baesler, who is the Mayor of the City of Lexington, Kentucky.

Gentlemen, I want to welcome you before the Subcommittee. We have heard the direct testimony from your colleague, and would ask you to proceed as you so desire, Congressman Hopkins.

Mr. HOPKINS. Mr. Chairman, and members of the Subcommittee, first of all let me thank you for this opportunity to present testimony to the House Public Works Subcommittee on Water Resources regarding Federal water policy.

Let me begin by saluting this Subcommittee and its predecessors for the historic role that you have played in modernizing America's waterways and constructing a system of water projects that have protected lives and prompted economic and recreational development throughout the Nation.

This panel in my view can be justifiably proud to have led the way to the completion of 1,533 navigational projects, 879 flood control projects, and 4,417 recreational sites.

Your vision has guided Congress in expanding Federal responsibilities to overcome new challenges presented by America's growing water resource needs.

As America boomed with economic and population growth in the decade following World War II, Congress responded by enacting the Water Supply Act of 1958 creating a permanent Federal presence in managing our water supplies. That remains the foundation of our national water policy today.

And while it has served us well, time and changing circumstances again are dictating that Congress reconsider whether the policy is adequate for today and the future.

I appear before you with a distinguished group of witnesses and a compelling body of testimony to attest to the fact that America's water policy must be strengthened, that we must add a new endeavor to the flood control and navigation work that you already have authorized.

I ask your support and your leadership for a dedicated effort to ensure a safe and adequate supply as the life blood of future generations of Americans.

Increased consumption, recurring drought, ground water pollution, and the anticipated effects of the global warming, these are the present day circumstances that threaten our water supply and clamor for Federal attention.

While annual rainfall has remained fairly constant the past 35 years, all the factors that diminish water supply have risen sharply.

Since 1955, America's daily water consumption has grown almost one and a half times faster than our population. The stress placed on our water supplies will increase only as our population increases and our economy expands in the future.

For many parts of the United States the drought of 1988 has become the drought of 1988 and 1989. As a matter of fact, I was just called a minute ago to hear the Weather Bureau is going to come before the Agriculture Committee this afternoon to predict what the drought might be for this summer.

I represent Central Kentucky, an area which has experienced 8 consecutive years of deficit rainfall. We have a profound and comprehensive water shortage; one that presents near and long term threats to our development.

But it is not merely parochial interest that causes me to be here today, nor was that the impetus of the legislation that I have proposed.

In discussing with other members of Congress the water shortages that we are facing in Central Kentucky, I found that this is not a unique regional problem. It is a national problem.

New York State, New York City, Boston, Pennsylvania, California, the Midwest, and parts of the Southeast and West all are facing imminent threats to their water supplies.

The deficit supply problem is compounded by an even more omnibus threat. Ground water contamination continues to spread. Now 50 states have report cases of ground water pollution.

Another new element to be considered is the impact of global warming. A hard scientific data base is still being formulated, but already the specialists in this new field tell us to anticipate such effects as rising temperatures and more frequent and more severe droughts.

Current policy does not have the flexibility to overcome these new challenges. Consider these ironies and inconsistencies. Our civil works policy treats the development of water supplies as a luxury and flooding as an emergency. Yet, inadequate water supplies could be the greatest enduring emergency our Nation will ever face.

Our water policy should reflect that fact.

Present Federal funding for civil works water projects is focused on flood control and navigational waterways. Helping those who are running out of water is as every bit as much a Federal responsibility as protecting those who are inundated by it.

I submit that it is neither fair, logical, nor prudent for this Government to say to its local communities and states, "If you have a flood, that is our problem; if you run out of water, that is your problem."

The Army Corps of Engineers will present information this morning about its water supply pricing and cost analysis processes. From the standpoint of those regions around the country which have been denied Federal assistance, we can describe the present process very succinctly. Simple stated, the rich get richer.

Those with flood control problems can receive water supply storage at a discount rate. Land and crop irrigation water projects receive Federal assistance. That same support is denied for people who simply need water to live. The Federal Government plays a direct role in water quality and distribution.

Federal funds to the tune of $50 billion have helped construct waste water treatment facilities. We fund sewer systems, help build water towers, and lay water lines, but we do not ensure the development of an adequate source of water.

In my view, Mr. Chairman, it is time we reexamined the faulty promise that produced those inadequacies and inconsistencies. The Office of Management and Budget calls it the "theory of vendible commodities."

Actually it is an outdated assumption OMB has etched in stone as some Eleventh Commandment of public water policy. The theory is that since stored water can be sold for residential and industrial purposes, water supply projects should be the exclusive responsibility of state and local Governments.

What we have here is a highly selective and very discriminatory application of user fee policy. But why just for water supply? If you carried out the vendible commodity theory to its logical conclusion, would it not also apply to Federal housing, Federal food programs, urban renewal programs, and other national endeavors? Wouldn't flood plain residents have to pay for the full cost of flood control? Wouldn't pleasure boaters, water skiers, and swimmers at federally funded impoundments have to pay a user fee? Yes, they would, except that blind administrative decisions usually have a way of bumping into the reality of public interest.

And that is when Congress has to step in and make public policies match public need. That is what I ask of you today.

Congress has been stymied by the threat of the presidential veto long enough. The adverse circumstances that afflict our water resources demand Federal participation. That is the intent of the legislation that I have introduced, H.R. 1155, the Water Supply Development Assistant Act.

And I am particularly pleased to note and express my appreciation for the co-sponsorship of four members of this Subcommittee, Mr. Roe, Mr. Lightfoot, Mr. Pallone, and Mr. Cox.

H.R. 1155 may not contain all of the answers, but I believe it is aimed in the right direction. At the very least, it should serve as a useful starting point for our journey toward the resolution of this growing national dilemma.

The budgetary problems that we face today should not make us insensitive to the needs of tomorrow. This legislation considers our budget situation. It does not ask for new funds to be appropriated. It only asks that water supply projects be given equal consideration with flood and navigation projects for Federal cost sharing.

We cannot solve the energy crisis by conserving energy. We cannot win the war on drugs by just saying no. And we cannot solve all of our water supply problems by conserving water.

With your guidance, Mr. Chairman, Congress recognized the importance of long range water management. You must have the foresight, in my view, to finish the work that was begun 31 years ago.

I appreciate, Mr. Chairman, the opportunity to have met with you, and I want to thank you and the other members for your consideration of the request that I have presented today.

Mr. HOPKINS. Mr. Chairman, I have, if you do not mind, or rather I am pleased to have the support of several witnesses who have come today to add their voices to the effort to expand Federal water policy.

Each of these witnesses can testify from experience in viewing with the problems that we are focusing on in this hearing.

Before introducing them, I would first ask permission to submit for the record the supportive testimony of the Governor of the Commonwealth of Kentucky, the Honorable Wallace Wilkinson, who was unable to be here today, Mr. Chairman.

Mr. NOWAK. Without objection, so ordered.

[The statement of Mr. Wilkinson follows:]

REMARKS BY GOV. WALLACE WILKINSON OF KY.
TO HOUSE SUBCOMMITTEE ON WATER RESOURCES
APRIL 26,1989

KENTUCKY IS A COMMONWEALTH OF ABUNDANT LAKES, STREAMS AND RIVERS. YET ON FOUR SEPARATE OCCASIONS IN THE 1980'S, MANY KENTUCKY COMMUNITIES HAVE EXPERIENCED WATER SHORTAGES. ABOUT FIFTY OF THEM HAVE HAD TO TAKE EXTRAORDINARY MEASURES TO AVOID SERIOUS PROBLEMS. NEVER BEFORE HAVE WATER SUPPLIES BEEN SO LOW IN SO MANY KENTUCKY COMMUNITIES SO OFTEN.

PART OF THIS PROBLEM HAS BEEN INSUFFICIENT RAINFALL. BUT AS IMPORTANT A CONTRIBUTING FACTOR HAS BEEN THE INABILITY OF THE MULTITUDE OF SMALL WATER SUPPLIERS TO PERFORM SOPHISTICATED TECHNICAL ANALYSIS NEEDED TO ASSESS THEIR VULNERABILITY TO DROUGHT AND TO PLAN FOR DEALING WITH IT. NOR ARE STATE RESOURCES SUFFICIENT TO PROVIDE THIS ASSISTANCE.

SUCH PROBLEMS ARE NOT UNIQUE TO KENTUCKY. NOTEWORTHY TODAY IS THE INCREASINGLY SEVERE WATER SHORTAGE IN THE NATION'S CORNBELT. SUCH PROBLEMS ARE NATIONWIDE IN CHARACTER AND IN POTENTIAL. THEREFORE, THE FEDERAL GOVERNMENT MUST RECOGNIZE AND SHOULDER ITS RESPONSIBILITY TO PROVIDE ASSISTANCE TO STATE AND LOCAL GOVERNMENTS IN ALLEVIATING WATER SUPPLY SHORTAGES. IN THAT CONTEXT AND FOR THE REASONS I HAVE MENTIONED, I OFFER MY SUPPORT OF HOUSE BILL 1155 WHICH HAS BEEN INTRODUCED BY CONGRESSMAN LARRY HOPKINS OF KENTUCKY.

THE FEDERAL GOVERNMENT ALREADY HAS PART OF THE FRAMEWORK IN PLACE TO ACCOMPLISH THE TASK CALLED FOR IN HR 1155, I.E., TO MAKE COMMUNITIES AND REGIONS ELIGIBLE FOR FEDERAL FUNDING OF CONSTRUCTION PROJECTS TO GUARANTEE A CLEAN, ADEQUATE WATER SUPPLY. HYDROLOGIC AND METEOROLOGICAL DATA NECESSARY TO ASSESS THE PROBLEM ARE AVAILABLE THROUGH THE NATIONAL WEATHER SERVICE AND THE U.S. GEOLOGICAL SURVEY.

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WATER SUPPLY PROJECT PLANNING CAPABILITIES ARE AVAILABLE IN A MULTITUDE OF AGENCIES INCLUDING THE CORPS OF ENGINEERS, THE BUREAU OF RECLAMATION, THE TENNESSEE VALLEY AUTHORITY AND THE SOIL CONSERVATION SERVICE. ALL THAT IS NEEDED AT THIS POINT IS FOR THE FEDERAL GOVERNMENT TO COMMIT ITSELF AS A FULL PARTNER IN PROVIDING THE SOLUTION.

MANY WATER UTILITIES ARE WILLING AND ABLE TO PAY THEIR OWN WAY, ALTHOUGH THERE ARE CERTAINLY INSTANCES IN WHICH FUNDING WOULD BE NEEDED. FOR SOME OF THESE, FEDERAL FUNDING SUCH AS PROPOSED IN HR 1155 WOULD BE REQUIRED TO ENHANCE THE MOST EFFECTIVE SOLUTION. HOWEVER, FOR MANY OTHER COMMUNITIES, IT MIGHT BE MORE APPROPRIATE FOR THE FEDERAL GOVERNMENT TO PROVIDE SUPPLEMENTAL FUNDING TO THE INFRASTRUCTURE REVOLVING LOAN FUND PROGRAMS THAT KENTUCKY AND SEVERAL OTHER STATES HAVE ALREADY IMPLEMENTED.

OFTEN, A MORE PRESSING PROBLEM THAN FUNDING IS THE FACT THAT WATER UTILITIES DON'T KNOW THAT THEY RUN THE RISK OF WATER SHORTAGE. THEY JUST DON'T KNOW. NOR DO THEY KNOW THE SEVERITY OF THE RISK OR HOW TO ELIMINATE OR MITIGATE IT. THESE ARE ALL QUESTIONS ON WHICH FEDERAL EXPERTISE COULD APPROPRIATELY BE BROUGHT TO BEAR. UNFORTUNATELY, INSTEAD OF TAKING A MORE ACTIVE ROLE IN THIS REGARD, IT APPEARS THAT THE FEDERAL GOVERNMENT IS RETREATING FROM A POSITION OF BEING ABLE AND WILLING TO ASSIST THE STATES AND LOCAL COMMUNITIES WITH THE INFORMATION THEY NEED, AS WELL AS PROVIDING THE FINANCIAL AID.

THE COOPERATIVE PROGRAM BETWEEN THE STATES AND THE U.S. GEOLOGICAL SURVEY IS THE MOST IMPORTANT AVAILABLE SOURCE FOR THE COLLECTION AND ANALYSIS OF THE BASIC WATER DATA NECESSARY TO MAKE WATER SUPPLY ASSESSMENTS. YET, THE 1990 BUDGET REQUEST FOR THE U.S. GEOLOGICAL SURVEY WOULD LEAD TO SEVERE CUTBACKS IN THE SURVEY'S ESSENTIAL SURFACE WATER DATA COLLECTION PROGRAMS.

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THE VITAL FEDERAL-STATE COOPERATIVE PROGRAM FOR DATA COLLECTION AND ANALYSIS WOULD BE CUT BY $4.27 MILLION DOLLARS . . . FROM $59.7 MILLION DOLLARS TO $55.5 MILLION. SINCE THE PROGRAM IS A FIFTY-FIFTY MATCHING ARRANGEMENT, ANOTHER $4.27 MILLION DOLLARS, OTHERWISE AVAILABLE THROUGH STATE PARTICIPATION, WOULD BE LOST. THAT IS A TOTAL OF EIGHT AND ONE HALF MILLION DOLLARS IN CUTS. THE REDUCTIONS COULD LEAD TO TERMINATION OF 650 CONTINUOUS STREAMFLOW RECORDING POSTS, WHICH AMOUNT TO 17 PER CENT OF ALL SUCH STATIONS SUPPORTED BY THE COOPERATIVE PROGRAM.

THE CUTS COULD ALSO ELIMINATE 30 CONTINUOUS STREAMFLOW STATIONS WHICH GATHER SIGNIFICANTLY MORE CRITICAL WATER SUPPLY DATA. THE IMPACT OF THIS BUDGETARY ATTACK IS WORSENED BY THE FACT THAT THE NUMBER OF DAILY-RECORDED GAUGES NOW IN OPERATION HAD ALREADY DECLINED BY 13 PER CENT DURING THE PREVIOUS ADMINISTRATION.

THE HARM WHICH THESE PROPOSED CUTS COULD DO TO KENTUCKY'S INFORMATION GATHERING PROCESSES HAS A MUCH GREATER POTENTIAL BECAUSE OF THE COMPARATIVELY HIGH NUMBER OF RIVER MILES IN AND ALONG THE BORDERS OF THE COMMONWEALTH. FURTHER, OTHER STATES WITH CONSIDERABLE RIVER MILEAGE, SUCH AS OHIO AND ILLINOIS, HAVE GREATER POPULATION BASES THAN KENTUCKY AND COULD MUCH MORE EASILY ABSORB SUCH FEDERAL BUDGET REDUCTIONS.

ANOTHER PROGRAM OF INVALUABLE ASSISTANCE TO THE STATES IN THE AREA OF WATER SUPPLY PLANNING IS THE CORPS OF ENGINEERS SECTION 22 PROGRAM. IN THAT PROGRAM, THE CORPS IS DIRECTED TO COOPERATE WITH ANY STATE IN THE PREPARATION OF COMPREHENSIVE PLANS FOR THE DEVELOPMENT, UTILIZATION AND CONSERVATION OF THE WATER AND RELATED RESOURCES WITHIN THE BOUNDARIES OF THAT STATE. THE ADMINISTRATION'S FY 1990 BUDGET FOR THE CORPS OF $2.5 MILLION DOLLARS FOR PLANNING ASSISTANCE TO THE STATES UNDER SECTION 22 REPRESENTS A REDUCTION OF NEARLY FIFTY PER CENT FROM CURRENT SPENDING.

THIS DECREASE IS INTENSIFIED BY A PROPOSAL THAT THESE SERVICES WOULD BE COST-SHARED WITH THE STATES ON A FIFTY-FIFTY BASIS. THIS PROPOSAL IS ESPECIALLY THREATENING TO MANY STATES' WATER SUPPLY PLANNING EFFORTS. SINCE ITS ENACTMENT, THE SECTION 22 PLANNING ASSISTANCE PROGRAM HAS YIELDED A WIDE VARIETY OF DATA THAT HAS BEEN EXTREMELY VALUABLE IN SUPPLEMENTING THE STATES' ACTIVITIES. YET, IN KENTUCKY AND IN MANY OTHER STATES, AS BENEFICIAL AS THIS INFORMATION IS, WE DO NOT HAVE THE UNCOMMITTED FUNDS TO BE USED TO REPLACE THE CUTS WITH MATCHING DOLLARS.

WE BELIEVE THAT THE DELETERIOUS EFFECTS OF THE CUTS PROPOSED IN THESE TWO PROGRAMS CANNOT POSSIBLY BE JUSTIFIED BY THE RELATIVELY SMALL, ESSENTIALLY UNNOTICED, SAVINGS THEY WOULD REPRESENT IN THE FEDERAL BUDGET.

LET ME ASSURE THE MEMBERS OF THE SUBCOMMITTEE THAT THE COMMONWEALTH OF KENTUCKY IS NOT URGING EXTRAORDINARY WATER SUPPLY ENHANCEMENT ACTIVITY BY THE FEDERAL GOVERNMENT IN A VACUUM. THE BEST MINDS AVAILABLE TO IMPROVE KENTUCKY'S WATER RESOURCE PLANNING ARE NOW AT WORK ON THE PROBLEM OF ASSURING AN ADEQUATE, SAFE SUPPLY OF PUBLIC DRINKING WATER.

IN THE WAKE OF AND BECAUSE OF THE DROUGHT OF THE SUMMER OF 1988, I APPOINTED A KENTUCKY WATER SUPPLY TASK FORCE TO CONSIDER THE PROBLEM FROM ALL ANGLES AND GIVE ME RECOMMENDATIONS ON WHAT THE COMMONWEALTH SHOULD DO TO NEGATE AND SOFTEN THE IMPACT OF ANY SUBSEQUENT MAJOR WATER SHORTAGE.

THAT TASK FORCE IS STILL FINE-TUNING ITS RECOMMENDATIONS TODAY. AMONG THEM WILL BE THESE SUGGESTIONS:

* THAT KENTUCKY GOVERNMENT PROVIDE ON-SITE TECHNICAL ASSISTANCE TO WATER SUPPLIERS WHO WISH TO DETERMINE THEIR VULNERABILITY TO DROUGHT AND TO SPECIFICALLY ASSESS WATER AVAILABILITY DURING TIMES OF POTENTIAL SHORTAGE.

* THAT WE SHOULD PROVIDE INCREASED TECHNICAL SUPPORT AND FUNDING FOR WATER SUPPLY PROJECTS AND INFRASTRUCTURE IMPROVEMENTS, INCLUDING MAINTENANCE, RENOVATION OF EXISTING FACILITIES AND DEVELOPING NEW UNDERGROUND AND SURFACE SOURCES OF WATER.

* MAINTAIN INVENTORIES OF WATER RESOURCES AND DEMANDS, INCLUDING A COMPLETE RIVERS ASSESSMENT, INFORMATION ON DROUGHT VULNERABILITY OF PUBLIC WATER SUPPLIERS, AND WATER USE PATTERNS.

* PROVIDE STATE SUPPORT FOR WATER SUPPLY PLANNING IN ORDER TO MINIMIZE SUCH ADVERSE ACTIONS AS THE IMPROPER SITING OF NEW FACTORIES WHICH MIGHT CAUSE ENVIRONMENTAL PROBLEMS AND WORSEN DROUGHT IMPACTS.

* REQUIRE WATER SUPPLIERS TO COMPOSE EMERGENCY PLANS FOR CURTAILING WATER USAGE AND ACCESSING ALTERNATIVE SUPPLIES.

THOSE ARE THE KINDS OF RECOMMENDATIONS UNDER CONSIDERATION IN KENTUCKY AS METHODS BY WHICH WE CAN DO A MORE EFFECTIVE JOB TO LESSEN THE HARM AND DANGER TO OUR CITIZENS AS A RESULT OF SEVERE WATER SHORTAGE. THEREFORE, I GLADLY SUPPORT CONGRESSMAN HOPKINS' LEGISLATION WHICH WOULD BRING THE FEDERAL GOVERNMENT MUCH MORE DEEPLY INTO THE EQUATION.

AGAIN, LET ME SAY THAT THE WATER SUPPLY PROBLEMS THAT HAVE PLAGUED THIS NATION FOR THE LAST SEVERAL YEARS CANNOT BE SOLVED BY THE STATES AND THE LOCAL GOVERNMENTS ALONE. THE FEDERAL GOVERNMENT MUST BECOME AN ACTIVE PARTICIPANT AND MUST BE WILLING TO COMMIT THE NECESSARY RESOURCES TO ARRIVE AT APPROPRIATE RESOURCES.

I SAY THIS BECAUSE THE PROBLEMS WE ARE DISCUSSING HERE TODAY, THE PROBLEMS WE ARE SEEING PLAYED OUT IN CRITICAL REGIONS OF THIS NATION AT THIS MOMENT AND ON AN INCREASING BASIS, ARE NOT JUST COMMUNITY, STATE OR REGIONAL WATERS SHORTAGE PROBLEMS. THEY AFFECT THIS NATION'S PRODUCTIVITY, ITS COMMERCE, ITS VITALITY, ITS QUALITY OF LIFE. THEY ARE THIS NATION'S PROBLEMS.

CONGRESSMAN HOPKINS' LEGISLATION - HR 1155 -- CAN GO A LONG WAY TOWARD REPLENISHING THE SHRINKING VITAL ASSISTANCE NECESSARY FROM WASHINGTON. AND IN APPROVING THIS LEGISLATION, THE UNITED STATES CONGRESS AND THIS ADMINISTRATION WILL BE TAKING GIANT STEPS TOWARD REPLENISHING AND PROTECTING THE VITAL, LIFE-GIVING, LIFE-SUSTAINING WATER SUPPLIES IN THE STATES AND THE COMMUNITIES OF OUR COUNTRY.

Mr. HOPKINS. Thank you, Mr. Chairman.

Mr. Chairman and Members, our next witness is the hands on Chief Executive of the Lexington-Fayette Urban County Government in my hometown.

Mayor Scotty Baesler of Lexington, Kentucky, is now completing the 4th year of his second term in that office. So distinguished has been his service and leadership that the voters of our community changed the merged Government charter to allow him to seek a third term.

Mayor Baesler speaks with the knowledge of a public official who leads one of the Nation's larger cities not blessed to be located on a major body of water.

He is a leader in our effort to formulate long range solutions, not just for Lexington, but for our areas throughout the country similarly affected.

In that role, Mayor Baesler also will be testifying on behalf of the United States Conference of Mayors this morning.

Mr. Chairman and Members, it is my distinct honor and pleasure to present to you the Mayor of my hometown, the Honorable Scotty Baesler.

Thank you.

Mr. NOWAK. Mr. Mayor, go right ahead into your testimony.

Mr. BAESLER. Thank you.

In addition to testifying in the capacity of Mayor of Lexington, I am also testifying on behalf of the United States Conference of Mayors.

In both of these capacities I would like to thank you for holding these hearings, and I would like to thank my Congressman, Representative Larry Hopkins for introducing H.R. 1155, the Water Supply Development Assistance Act.

The goal of H.R. 1155 is a goal which all Mayors share. Preservation and development of stable resources of water supply for our citizens, both individual and corporate, is a top priority of local Government.

Water, like other basic services, is taken for granted until a problem arises. We have seen that problem. Providing a safe and adequate water supply for our communities becomes a major concern throughout the country.

My testimony this morning will impart two views of why H.R. 1155 deserves the support of this Committee, and why the Conference of Mayors and I support its intent.

The first of these views is offered on behalf the Conference of Mayors and will address the needs we have in America as a nation. The second is a view from a local perspective, my own, and those I represent from Lexington and Central Kentucky.

The national needs; that the Water Resource Development Act of 1986 should be amended to provide Federal cost sharing for water supply projects is made clear in the declaration of the policy contained in Section 1 of the Bill.

And I quote, there is a national interest in the development of adequate and dependable sources of water for municipal and industrial purposes, unquote.

The National Council on Public Works improvement, in their report to Congress entitled Fragile Foundations, echoes the legisla-

tion's finding that the quote, the provision of high quality water for human consumption and industrial use is a major component of Nation's physical and economic well-being, unquote.

Mr. Chairman, water supply needs are of three kinds. First, is the maintenance and replacement of existing facilities; Second, is the expansion or construction of new facilities to address growth demands; And, third, is the introduction of new technology into existing facilities in order to meet the regulatory requirements.

While some assume that these needs categories may be separated by region, this is not necessarily the case. While your region of the country, Mr. Chairman, the northeast, commonly faces problems in category one, namely problems of deterioration, it is also known that growth over the last few years has made many current facilities obsolete.

It is my understanding that the City of New York, the greatest consumer of water in the region, is facing both drought conditions and capacity limitation and is looking to expand its current delivery system from two tunnels to three.

While such an increase is largely a local issue, it is clearly of national interest that New York and its suburbs have an adequate water supply.

In addition, the preservation and maintenance of the New York City system preserves the precious commodity of water for upstate New York. The issue of one city's needs are indeed issues for an entire region as well.

While it is always difficult to estimate needs on a national level, there has been six core studies conducted in the 1980's on water supply needs.

According to these six studies, the range of annual needs in 1982 dollars stretches from a low of $4.4 billion to a high of $10.7 billion. Further, Wade Miller Associates estimates of these costs some $400 million to $900 million arise each year as a result of the statutory requirements of the Safe Drinking Water Act.

Now for our local and regional perspective. Lexington-Fayette County is located in the central part of the State of Kentucky. Our water source is the Kentucky River. Over the length of the Kentucky River basin some 500,000 people in 14 communities draw their water from the river.

It is fair to say that last summer's water shortage and drought had a pronounced affect upon most people living in the bluegrass area. We were suffering, like many parts of the country, from a 100 year drought.

For the first time since the 1930's, water emergencies and cut backs were instituted not only in the cities, but to the homes, which imposed personal and economic concern region wide.

Although growth and development had raised concern regarding adequate water supplies for various parts of the State of Kentucky in prior years, last summer's drought has made us take a serious look at both the long range and immediate issues regarding our region's water supply.

We have formed a region wide steering committee and have been taking a comprehensive look at population projections, industrial use demand, conservation techniques, and various alternatives on

new impoundments and other physical structures. We are looking at these alternatives in light of short term and long term needs.

We have a lock and dam system on the Kentucky River which provides for transportation and pools for withdrawal of water for consumptive purposes. That lock and dam system was largely constructed in the late 1800's, and since 1880, has been owned and maintained by the Federal Government.

The system now is in the process of being turned over to the State of Kentucky. The lock and dam system has some very serious physical problems that must be addressed immediately.

Some people in our state feel that the problems should be addressed to the Federal Government before being turned over to the state. In any case, it is imperative that action be taken soon.

Several multi-million dollar repair projects must be undertaken within the next 5 to 10 years in order to maintain that system which now is the main source of water supply for a half a million people.

In addition, however, we have identified a need for other physical structures in order to meet the demand for water supply in Central Kentucky for the next 10 to 30 years and beyond.

The need for a regional water supply impoundment located on a tributary of the Kentucky River was identified by the Corps of Engineers in 1978 and again in 1988. Cost estimates ranged rom $26 million to $45 million.

It is in the area of sources of water supply, particularly regional impoundments and reservoirs, that local communities are least able to provide for themselves. The costs are overwhelming and the local jurisdiction boundaries complicate the issue of regional supply.

Mr. Chairman, in order to meet these needs and a need for similar situations across the entire country, we propose that there be a combined Federal/state/local consumers effort established.

At the consumer level we are suggesting the participation come both in the form of sharing the cost and in conservation. Water conservation should become a vital part of everyday life. Education and awareness are vital to achieving this goal. Technological measures are also important and should be instituted.

In our proposed model, no community could qualify for cost sharing with the Federal or the state without a commitment to an established level of conservation.

Local governments, of course, will need to participate in the planning, funding, and implementation of any water supply measures taken.

Likewise, we feel state Government and Federal Government participation is key in both the planning and the cost sharing.

Providing basic services is the primary function of Government at all levels. The provision of safe plannable water is at the most basic level in terms of human requirements for everyday life for the sustenance of a community and for growth and development of any local, state, or federal economy.

We know that industry is taking a wary look at expansion and locating new facilities in our region as a result of last year's water shortage problems, and we are at an apex of what is referred to as

the "Golden Triangle" in Kentucky because of our historically good economy and posture in the state overall.

We are concerned, as citizens are concerned, and we feel Government, all three levels, Federal, state, and local, should be concerned and should be involved in the process for looking for the answers.

We in Lexington, and indeed all of Kentucky, support the efforts of Congressman Hopkins and this Committee in amending the Water Resource Development Act to provide Federal cost sharing for water supply projects.

We consider it vital to the combined effort we are suggesting, which ensure that the life blood of our communities across this country is not threatened.

Thank you, Mr. Chairman, for allowing me to speak.

Mr. NOWAK. Thank you very much, Mayor.

We had a conversation with the Mayor of Richmond, Virginia, a couple of weeks ago, and she also represents as well as the City of Richmond, the League of Mayors in trying to look at some of these water problems.

I might just for a minute deviate from this discussion to make you aware of a new initiative that the League is struggling to come up with, and that is the combined sewage overflow problem that is in existence in many cities, and when we look at the other side of the water picture, of course, the Sewer Construction Grant Program is also diminishing.

Its affect upon the states and the incentive have been reduced, and yet, the problems in that other side of the area, which of course corresponds really to one of the statements you made concerning conservation. They really flow hand and hand, if you will.

And we are struggling with that side of it as well as with the supply side. I think what I am trying to attempt to do is bring both of these together so that we can have a rational overall plan for the first time in this country concerning water resource both on the supply, and, of course, the treatment side.

And I would hope that the League will look at this agenda and in that, of course, would be Congressman Perkins and Congressman Hopkins solutions to the one portion of the problem.

I think overall if we can get that view instilled and bring together a consensus in this country we will be much further ahead instead of doing it piecemeal with a various infrastructure financing mechanism for each piece.

When you try to deal with multiple, as you have indicated in your testimony, jurisdictions it is very difficult to pull it all together.

And the reason, of course, flood control navigation was looked at back in 1902 as a Federal concern was because they realized rivers flow through more than one jurisdiction.

And I think we can say the same thing about the treatment and the supply of water.

Mr. BAESLER. Yes, sir, we can.

Mr. NOWAK. That is not, quote, solely local concern, unquote, because you are going to be affected by what happens upstream, downstream, and in your particular circumstances, with a reservoir

right in your own community that has other obligations and was built for other purposes perhaps in trying to solve these problems.

But I want to thank you for your testimony. I know you have a commitment that you have to get back to you local community or else they will not believe you are working in Washington. [Laughter.]

But I want to thank you for coming too and I think your testimony is going to be very helpful. I might just say, we are going to keep this record open. I was very serious when I said last year and made a commitment to both Congressman Perkins and Congressman Hopkins that we are going to look at this thing and try to bring on board EPA and the Corps and the President, if you will.

I might just say that I wrote 2 weeks ago to the President to ask him to convene a White House Conference on water resources so we could look at this in terms of its overall affect and see where the proper Federal commitments can be and the combination of these isolated programs that are out there and clean water, and the Corps project, and Bureau of Reclamation and everybody has got a little piece of a very complicated problem. And I think if we could start to pull this altogether we would be able to make some real progress.

And I look forward to working with you not only as a Mayor, but as a representative of the League of Cities because it has that cross-cut jurisdiction.

Congressman Hopkins.

Mr. HOPKINS. Mr. Chairman, thank you and the other members again for allowing us to testify. We look forward to working with you as you lead us through this maze of problems that you have so adequately described.

I have the pleasure of serving with Mr. Stangeland on Agriculture and we have equal number of problems there that we are going to be working with you and the other members of this Committee on.

I also have the privilege of serving on the Armed Services Committee and all of us know that the bill that I have presented here is not proposed to be the Eleventh Commandment, but gives you another piece of clay, perhaps, to work with.

But in serving on the Armed Services Committee I can tell you that in my view if we can afford to consider spending $500 million for each new B-2 Bomber, then I think we can at least consider making sure that we have adequate water supply for the residents of this country, particularly when we even look at foreign affairs and the money that we spend in helping others. Perhaps we might want to consider helping ourselves a little bit along the way.

And with that in view, Mr. Chairman, I look forward to working with you, and thank you again for allowing me to be here this morning.

Thank you.

Mr. NOWAK. Thank you very much.

Mr. BAESLER. Thank you.

Mr. NOWAK. We have—Mayor, if you would stay just for a minute. We wanted to—that was not the end, that was the beginning.

Let me first of all say, I am going to withhold other questions that I had, and if, Larry, you could stay with us for a while, let me turn to Arlan Stangeland who has prepared a memorandum of questions on this subject, and I hope that he will—he also acknowledges, of course, your problem with the airplane, but you do have a few minutes. We will guarantee you get to the airport on time even if we have to send the driver out with you. Let me turn to Arlan Stangeland.

Mr. STANGELAND. Thank you, Mr. Chairman.

I will be very, very brief. First of all, I would like to commend all three of you, but particularly my colleagues for I think a very succinct in-depth statement on the issue.

Apparently both of you have spent a great deal of time with it and a great deal of study, and I think what you come to us and propose today certainly has a lot of reason to it. It is not pie in the sky. It is not a great Federal giveaway, but is something that is responsible and something that is necessary.

I just have a few questions as we struggle with this. They may be appropriate and they may not, but they might lend some insight as to what we have to look at. I can appreciate and you know, Chris, I worked with you in the last session with your concern and empathize with you greatly.

Much of what you said and asked for made a lot of common sense, and yet, the law just would not permit us to do it.

Have you ever taken a look at what the cost would be to the communities in those cases where you have those reservoirs that apparently are paid for, what your cost to the communities would be if they paid a proportionate share of the initial construction cost not indexed for inflation.

Mr. PERKINS. Well, obviously it would have a greater affect on the more recently completed dams than it would on the—let us say Dewey Lake, which was completed for a total cost of $8 million in 1948 and 1949. Carrs Fork would have the highest, $45 million.

Yes, we have looked at that. In fact, last year as I recall with you, we were bantering about that as one possible solution when we were looking to see what we were going to put together.

Mr. STANGELAND. Have you also looked at what your alternative costs are if you cannot tap into that water and you have to find your own sources? You have to—you are going to incur costs for your communities by doing that.

Mr. PERKINS. Well, Arlan, there is no alternative. When we talk about rivers reaching low flow we literally do not have any other type of alternative that we can turn to at this time. We have to have—this is a supply problem and it would be wonderful if we could—you know if the rivers would rise, but without that type situation we just have to go somewhere for the supply. And we have a real ground water problem in Eastern Kentucky.

We have had documentation. A study done in my district by Morehead State University showed that a lot of the fecal chloroform, I guess it is called, was 75 to 80 percent in wells that were in Eastern Kentucky, which I represent, and it was a very dangerous thing. In hand dug wells it was up to 90 to 95 percent. These people are ingesting this on a regular basis.

So trying to get—communities are small. What we are trying to use, as I talked about earlier, is a regional approach. And in order to do that we have used a variety of different funding mechanisms. Abandoned mine land funding has helped tremendously for water lines in Eastern Kentucky.

I do not now what we would have done the last 5 years without that type of funding.

Mr. STANGELAND. How many of those reservoirs are joint reservoirs, flood control and hydro?

Mr. PERKINS. None.

Mr. STANGELAND. None. In the case of a situation where you have a reservoir that is joint flood control and hydro and we were to tap in for municipal water in cases of low flows I would expect that the drawing off of water for municipal use, whether it be for industrial or for home use, probably would impact on that. Hydro is—would you envision that we would have to then—or the communities reimburse somebody that is providing that hydro electricity for the loss of electricity or the additional cost for users? Do you see that as any kind of a problem? It is something that you might want to think about, both of you.

Mr. PERKINS. I truly do not. As far as I am concerned with my proposal, we could even limit it to non-hydro dams so we can just eliminate the problem altogether, as far as I am concerned.

Mr. STANGELAND. Has any studies been done that you are aware of that in case of low flows drawing off municipal water in those impoundments may then exacerbate the problem of low flows or be to such a point where you might be limited to how much you could draw in periods of drought and low flows to a point where you might depend on a water source and all of a sudden find you do not have a water source that is available to you because of low flows?

Mr. PERKINS. As I am sure you recall, the Corps of Engineers has got to go ahead and approve the plan so it does not affect existing flood control types of situations.

So I truly do not believe that it is going to have any type of adverse effect. So maybe I am not getting the gist of your question here, but any adverse effect upon the structure of the flood control project at all.

Now if we are talking about—give it another shot, Arlan. I am not sure I understood what you were asking.

Mr. STANGELAND. Well, I am not sure of the gist of my question either, Chris. [Laughter.]

Let me ask you one last question, both of you, and you too, Mr. Mayor, and I do not want to hold you up.

Very quickly, if we were—at the current time we construct impoundments for flood control and hydro accommodation. And if we were then to include water supply, what would you envision a community's share, do you think it is 100 percent? It should not be 100 percent because flood controls are not 100 percent.

A community participates to a certain cost sharing in a flood control. Suppose then that because we are going to have water supply, in order to accommodate the water supply needs we have to increase the height of the dam, increase the cost of project to accommodate the water supply over and above the need for flood control.

What proportion or proportionate share do you think a municipality should bear in those kinds of situations? Are you talking about a proportionate share rather than 100 percent? What are you talking about?

Mr. PERKINS. Well, I think he would be talking about—well, Larry, wouldn't you be talking about the same type of things that are included in the 1986 Water Bill, the same type of proportionate cost on cost sharing? That would seem to be the logical thing.

Mr. HOPKINS. My cost sharing, just as a starting point, Arlan, for you all again, the bill that you will see that I have introduced is a 65/35 ratio, 65 Federal/35 local.

So they are willing to do their part, but obviously we all represent some areas that just cannot afford it all. And we have had some areas in our community last summer that actually ran out of water. It was no longer a matter of just rationing it, but where in fact water had to be hauled in to a community.

And just as a starting point, my bill suggests a 65/35 percent ratio.

Mr. BAESLER. Speaking of my community, we support the same type of cost sharing we had with the development of the sewer plants, as Mr. Chairman talked about a minute ago. We started out at about 75/25 and got down to about 55/45, which we found very workable in our community because that would give us an opportunity not only from local tax dollars, but also projects from user fees to help make up the 45 as was required, as you I am sure know, in the sewer program.

Mr. STANGELAND. Well, I appreciate very much your testimony, and I think we will counsel with you as we go through the process. As I said, you have obviously studied the issue very carefully, and I think that you come to us with a reasonable request that ought to be looked at very, very carefully.

I think water and water supply is going to be a critical issue in the coming years, there is no question about it, not only in your area, but throughout the country.

Thank you.

Mr. NOWAK. Thank you.

Mr. Ballenger from North Carolina.

Mr. BALLENGER. Thank you, Mr. Chairman.

I am addressing my comments to Mayor Baesler and to the cities in general. Chris Perkins has a special situation in his district. Cities get their money by charging for water by the gallon or by the cubic meter.

As we are sitting here trying to figure out the cost sharing breakdown, has anybody ever approached it from the view point that bonds could be issued? The projected income from your water system would be what would fund the bonds that you use to build the water project. Everybody seems to approach this issue from the premise that water is free, but when you start spending $25 billion or $35 billion or even a million dollars on dams, then it no longer appears to be free.

Have the legal municipalities come up with an idea of what would be a legitimate charge that could be added to the price of water as you have used it for both municipal and industrial purposes?

Mr. BAESLER. I can give you an example. If you built a dam for $40 million in the Kentucky River, on the customers that used it, it would take $4 a month per head to pay for it basically. That give you an idea. We have done those figures, you know, trying to see if we had to do it all ourselves.

I do think it is appropriate, as I indicated earlier, that some of that cost be borne by the user. I do not think it is appropriate that everything be paid 100 percent. And we did that in the sewer where some of it was borne by the user with a fee, and I think it is appropriate here.

Mr. HOPKINS. Would the gentleman yield?

Mr. BALLENGER. Yes, sir.

Mr. HOPKINS. Mayor, did you say—I want to make sure I was right on that. Is that $4 per head or $4 per meter?

Mr. BAESLER. Four dollars per customer. It is a meter.

Mr. HOPKINS. So that would be meter rather than per head.

Mr. BAESLER. Four dollars per meter per month.

Mr. BALLENGER. Thank you, Mr. Chairman.

Mr. NOWAK. Mr. Hastert from Illinois.

Mr. HASTERT. Thank you, Mr. Chairman.

Listening to the testimony, you know, in my district in Northern Illinois we have problems with water, with aquifers, with pollution, and man-made dictates on what the quality of water should be.

But as we also see the other side of the problem, the drinking water supply problem, plus waste water treatment issue. In your Conference of Mayors have you begun to look at the issue of how we can reuse that water?

And, of course, we need potable water, you need drinking water in homes, and also water for washing and cleaning. There are a lot of other uses for water in municipalities, watering lawns, golf courses, lakes, and ponds, and things like that. We need to begin to recapture the water from our waste water treatment plants and to develop strategies when we start funding these plants so that we have the type of waste water treatments that can reuse that water. Is that part of the strategy for the Council of Mayors?

Mr. BAESLER. Yes, sir. Presently, to give you an example, we put out 20 million gallons a day of water that goes back into the river for other people's water source through our treatment plant. Because of meeting the EPA's standards we are now allowed to do that. In effect, it goes in one end and comes out the other as somebody else's supply.

In addition, there have been several type of projects about the—I do not know exactly all the correct terms, but it is using the water to sort of spread out over certain areas that then would filter down and be clean and used through the growth, grass or trees or whatever. And in some communities they have tried that where you see if you could—I cannot think of the name. It is not reforestation, but where it runs back down into the river or into the source again trying to recycle it, so to speak.

And I think those are things that have to be considered. And one that is being considered is, we have talked about always building reservoirs, but it is pumping back up. In other words, when you fill down, pump back up the other way so when you need it you can release it and it comes back down to you after you have—after it

has gone through either a sewer plant or after just coming out of the sky.

So those things are being considered in different locales, yes, sir.

Mr. HASTERT. And is the technology there today for uses of gray water and actually purifying water and water treatment systems so that water is readily usable for uses other than potable water?

Mr. BAESLER. Yes, sir. It is very much so. If you comply basically with the turf sharing and all the other type requirements for the sewer use that EPA required and then for you to come out and go down the river and then it goes back to another treatment source. So it is no difference. I mean it is just like regular drinking water anybody else has.

Mr. HASTERT. And with the understanding that at some places in this country the acute shortage of water is different from other places in this country, does it make sense to tie water resource dollars and water purification dollars with water treatment in saying that you should have these types of recovery systems as well?

Mr. BAESLER. Yes, sir. I think it makes sense to require the—some communities are not going to be able to afford it. So I cannot speak for all communities. But for our community it would make sense because I think we have to got insist that we have got to conserve it and we have got to use the best technology available. And very candidly, the only way that is going to happen, if you come in here and say, okay, get X, Y, and Z, you have got to do A, B, and C. And I think that is very reasonable from my perspective in the local community.

Mr. HASTERT. Thank you.

Thank you very much, Mr. Chairman.

Mr. NOWAK. We will turn to Mr. Cox from California.

Mr. COX. Very briefly, for those of us who are interested in the objective of this proposed legislation, I wonder if any of you can offer some help in responding to concerns that this is just going to open the flood gates, if you will, for new Federal appropriations?

I was particularly interested, Congressman, in your testimony that this bill does not ask for new funds to be appropriated, because we have other testimony from another Congressman that: "it is clear that additional Federal funds are going to have to be forthcoming." Obviously there is a trade off. We are trying to pull funds out of a single pot, and it will require either short changing other projects or appropriating new funds.

What can we tell the Administration so that OMB's concerns about busting the budget might be allayed?

Mr. HOPKINS. Mr. Cox, the final determination, of course, would be up to you and the other members of this Committee as to how those funds are going to be disbursed, but the legislation that I have proposed does not in fact require additional funds.

It does, however, allow you to decide where those funds are going to be disbursed. I think it is unfair, very frankly, for the Government to look solely at flood control as the only objective to our water needs in this country.

It depends on whether you have too much water or whether you do not have enough water. Unfortunately, in my part of the country we either have a drought or flood, and we experience frequently both within the same fiscal year.

It seems to me that whether my legislation passes or not, I have been on this campus long enough to learn that if you do not care who gets the credit you can get a lot done around here.

Very frankly, I think there is going to be a change in water policy, if not now, sometime in the future because I think the people of this country are demanding it from all over different areas of the country.

The Northeast as an example, had a snowfall shortage this year, which means that their reservoirs will be lower this summer that they draw from. So they are going to have a different type of water problem than I have.

But back to your basic question, which I think is a good one and a fair one, my legislation just starts out with the emphasis that I am not asking for additional money. I am simply asking to be able to compete within the water policies that are currently before this country for water supply as well as flood control.

Mr. Cox. Would you be amenable to additions to this legislation that would provide protections for the FISC?

Mr. HOPKINS. Protections what, please?

Mr. Cox. Protections for the Federal Treasury, so that the amount of funds available for such projects would not unnecessarily be enlarged?

Mr. HOPKINS. Yes. Yes, I would.

Mr. Cox. Thank you very much.

Mr. NOWAK. Thank you very much, Mr. Cox.

[The prepared statements of Mr. Perkins, Mr. Hopkins, and Mr. Baesler follow:]

TESTIMONY OF THE HONORABLE CARL CHRIS PERKINS BEFORE THE SUBCOMMITTEE ON WATER RESOURCES, COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION, U.S. HOUSE OF REPRESENTATIVES, WEDNESDAY, 10 AM, 2167 RHOB.

Mr. Chairman:

I want to thank you for the opportunity of appearing this morning to discuss the involvement of the Corps of Engineers in providing municipal water supplies. As you know, I am from an area of the country, in the heart of Appalachia, which has very little tax base and substantial numbers of those living in poverty. Over the past several decades through programs authorized by this Committee, such as the Appalachian Regional Commission and the Economic Development Administration and numerous other programs, the poverty rate has been cut in half, although it is still substantially above the national average and in most cases, double the national average.

Although substantial progress has been made, one of our unmet needs is the provision for safe drinking water to our people. My area of Kentucky is one of the most heavily populated areas classified as rural in the United States. The provision of drinking water is also complicated by having to pump it over mountains. What we have done is to establish large water treatment plants and run lines out from them into unincorporated areas. While thousands have been served in this manner, tens of thousands more need to be served and have well water which does not meet standards.

The problem that we are facing is that the rivers from which we are drawing water are inadequate to meet the need. Several communities with whom I have been working in extending lines are reaching the minimum low flow capacity of withdrawing water from these rivers. In order to meet the need, an additional supply has to be found. In Eastern Kentucky we are in the fortunate position of having that additional supply already on hand but using that additional supply is rendered impossible by current law. Let me explain. In Eastern Kentucky, over the years, a series of flood control reservoirs have been built which had, as part of their authorized purpose, the maintenance of minimum low flow in the rivers. These reservoirs have performed extremely well. Many of them were constructed many years ago. Dewey Reservoir in Floyd County was completed in the late 1940's. Grayson Reservoir in Carter County was completed about twenty years ago, and Carrs Fork Reservoir in Perry and Knott counties, and a little bit of Letcher County, was completed about fifteen years ago. Three communities near these reservoirs are rapidly reaching or have reached the minimum low flow from which they can withdraw water from the rivers. The City of Grayson, a little over a year ago, had a proposal to withdraw water in the amount of two million gallons per day from Grayson Reservoir in order to expand their plant capacity and serve unincorporated areas of Carter County and even serve the Oldtown area of Greenup County.

3.

The City of Grayson currently draws its water from the Little Sandy River downstream from Grayson Reservoir. This river did not have the capacity to support the proposed expansion. The City of Grayson went to the Huntington District Office which has jurisdiction over Grayson Reservoir. The City's proposal was to put a raw water intake in Grayson Reservoir at the City's expense with the design to be approved by the Corps of Engineers. The Corps determined that this could be done without any adverse impact on the flood control mission of Grayson Reservoir. The City was willing to pay the annual operation/maintenance cost of the Grayson Reservoir solely attributable to maintaining this storage capacity for their water supply. The problem occurred because of the provisions of current law which required the City of Grayson to pay that portion of the cost of construction of Grayson Reservoir attributable to providing this storage capacity indexed for inflation. This amount came to about $800,000. This cost killed the expansion. The area to be served had an unemployment rate, and still does, of 18-20%. It has a poverty rate in excess of 20%. This additional cost killed the project. I might add that surveys in the area show that the well water is contaminated. The City of Prestonsburg in Floyd County is working with County officials to extend water lines throughout Floyd County. Prestonsburg draws its water from the Levisa Fork of the Big Sandy River. They can withdraw from the river

up to four million gallons per day. However, as part of the planned expansion throughout Floyd County, the City of Prestonsburg needs a supply of six million gallons per day. Nearby is Dewey Lake which was completed in 1948-49 at a total cost of approximately eight million dollars. Although I don't have final figures, it is estimated that the City of Prestonsburg, in order to utilize Dewey Lake, a 40 year old lake for two million gallons per day, they would have to pay up front six to seven million dollars. Floyd County has a poverty rate of about 25% and an unemployment rate of around 15%. It cannot afford this cost. The City of Hazard was working on a similar proposal over in Perry County to provide service to unserved people in five counties. Population area unserved contain about eighty thousand. The poverty rate of the affected area is also around 25% with unemployment rates ranging up over 20%. The City of Hazard currently withdraws water from the North Fork of the Kentucky River and is seeking additional capacity from Carrs Fork Reservoir completed about 15 years ago at a cost of around forty-five million dollars. The payback would be prohibitive.

In each of these three instances these reservoirs were built many years ago and have been bought and paid for. They can provide water storage capacity with no adverse impact on their flood control missions. The extra operation and maintenance costs are minimal. There is no earthly reason why these communities should be required to pay for a portion of these already completed reservoirs.

I would, therefore, propose the following solution which would entail no expenditure of money by the Corps of Engineers. I would propose that where there is a Corps of Engineers reservoir in which water was impounded at least ten years ago and which the area to be served by the expanded water system has a poverty rate in excess of 15%, that the repayment provisions be waived. I would further propose that this waiver of repayment be limited to systems operated on a not-for-profit basis under the laws of the appropriate State. The municipal systems would have to pay for the cost of putting in the raw water intake with the design to be approved by the Corps of Engineers to insure that the purposes of the lake are not diminished and that they pay as is under current law the annual operations and maintenance cost attributable to the storage of this water.

As the Subcommittee knows, I was very much opposed to the cost sharing provisions of the 1986 bill. It would seem to me, however, that my proposal is consistent with the provisions of the 1986 bill which provides for a reduction in payment for flood control projects for poor communities. I am in the process of having my proposal put into legislative language. I think it is a modest proposal, but a reasonable proposal which will not cost the Corps of Engineers one red cent. I don't believe it makes any sense to make these communities pay for part of a reservoir which has already been built and has already been paid for. There is no

rational reason for such policy. In order to meet the argument that a community might try to build a flood control reservoir and then right after it is completed, use it for their municipal water supply, I have made the proposal that the lake involved must have been water impounded at least for ten years. The ten year figure seems to me to be reasonable. We all know how long it takes to get one of these reservoirs constructed. From the time an authorization is first proposed until actual construction begins, generally is a minimum of eight years and sometimes even longer. Once construction begins, and by that I means when starting the land acquisition, it may be another five to seven years before it is completed and water is impounded. This would mean that there would be a period of thirteen years from the time an authorized project is proposed until water is impounded and an additional ten years before it would be eligible for this waiver provision, if the area to be served met the poverty criteria. I believe this meets the possible objection of using the flood control program as a subterfuge for a municipal water supply.

I believe that based on my experience in working with poverty based formulas, that probably the best criteria of an inability to pay is the poverty rate. This is a figure which is readily available and widely accepted. A poverty rate of 15% is overwhelming evidence that the community has substantial numbers of poor people. It is also a strong indication that the unemployment rate, as a general rule, is quite high in comparison to the national average. It is

furthermore an indication that many of those who are working, as a general rule, are in relatively low wage jobs, either at or a little bit above the minimum wage.

I hope that the Subcommittee will be able to include my proposal in the Water Resources Bill which it hopes to produce later in this Congress. I look forward to working with you and the Members of this Subcommittee.

Thank you for the opportunity of appearing before you this morning.

Statement by U.S. Rep. LARRY J. HOPKINS (R-KY)
before the
House Public Works Subcommittee on Water Resources

April 26, 1989

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

THANK YOU FOR THIS OPPORTUNITY TO PRESENT TESTIMONY TO THE HOUSE PUBLIC WORKS SUBCOMMITTEE ON WATER RESOURCES REGARDING FEDERAL WATER POLICIES.

LET ME BEGIN BY SALUTING THIS SUBCOMMITTEE AND ITS PREDECESSORS FOR THE HISTORIC ROLE YOU HAVE PLAYED IN MODERNIZING AMERICA'S WATERWAYS AND CONSTRUCTING A SYSTEM OF WATER PROJECTS THAT HAVE PROTECTED LIVES AND PROMPTED ECONOMIC AND RECREATIONAL DEVELOPMENT THROUGHOUT THE NATION.

THIS PANEL CAN BE JUSTIFIABLY PROUD TO HAVE LED THE WAY IN THE COMPLETION OF 1,533 NAVIGATIONAL PROJECTS, 879 FLOOD CONTROL PROJECTS AND 4,417 RECREATIONAL SITES.

YOUR VISION HAS GUIDED CONGRESS IN EXPANDING FEDERAL RESPONSIBILITIES TO OVERCOME NEW CHALLENGES PRESENTED BY AMERICA'S GROWING WATER RESOURCE NEEDS.

AS AMERICA BOOMED WITH ECONOMIC AND POPULATION GROWTH IN THE DECADE FOLLOWING WORLD WAR II, CONGRESS RESPONDED BY ENACTING THE WATER SUPPLY ACT OF 1958, CREATING A PERMANENT FEDERAL PRESENCE IN MANAGING OUR WATER SUPPLIES.

THAT REMAINS THE FOUNDATION OF OUR NATIONAL WATER POLICY TODAY.

AND WHILE IT HAS SERVED US WELL, TIME AND CHANGING CIRCUMSTANCES AGAIN ARE DICTATING THAT CONGRESS RECONSIDER WHETHER

THAT POLICY IS ADEQUATE FOR TODAY AND THE FUTURE.

I APPEAR BEFORE YOU WITH A DISTINGUISHED GROUP OF WITNESSES AND A COMPELLING BODY OF TESTIMONY TO ATTEST TO THE FACT THAT AMERICA'S WATER POLICY MUST BE STRENGTHENED, THAT WE MUST ADD A NEW ENDEAVOR TO THE FLOOD CONTROL AND NAVIGATION WORK YOU ALREADY HAVE AUTHORIZED.

I ASK YOUR SUPPORT AND LEADERSHIP FOR A DEDICATED EFFORT TO INSURE A SAFE AND ADEQUATE WATER SUPPLY AS THE LIFEBLOOD OF FUTURE GENERATIONS OF AMERICANS.

NEW CHALLENGES DICTATE THE NEED FOR NEW POLICY

INCREASED CONSUMPTION, RECURRING DROUGHT, GROUNDWATER POLLUTION AND THE ANTICIPATED EFFECTS OF GLOBAL WARMING: THESE ARE THE PRESENT-DAY CIRCUMSTANCES THAT THREATEN OUR WATER SUPPLY AND CLAMOR FOR FEDERAL ATTENTION.

WHILE ANNUAL RAINFALL HAS REMAINED FAIRLY CONSTANT THE PAST 35 YEARS, ALL THE FACTORS THAT DIMINISH WATER SUPPLY HAVE RISEN SHARPLY.

SINCE 1955, AMERICA'S DAILY WATER CONSUMPTION HAS GROWN ALMOST 1 1/2 TIMES FASTER THAN OUR POPULATION.

THE STRESS PLACED ON OUR WATER SUPPLIES WILL INCREASE ONLY AS OUR POPULATION INCREASES AND OUR ECONOMY EXPANDS IN THE FUTURE.

FOR MANY PARTS OF THE UNITED STATES, THE DROUGHT OF 1988 HAS BECOME THE DROUGHT OF 1988 - 89.

I REPRESENT CENTRAL KENTUCKY, AN AREA WHICH HAS EXPERIENCED EIGHT CONSECUTIVE YEARS OF DEFICIT RAINFALL. WE HAVE A PROFOUND AND

COMPREHENSIVE WATER SHORTAGE...ONE THAT PRESENTS NEAR AND LONG-TERM THREATS TO OUR DEVELOPMENT.

BUT IT IS NOT MERELY PAROCHIAL INTEREST THAT CAUSES ME TO BE HERE TODAY, NOR WAS THAT THE IMPETUS OF THE LEGISLATION I HAVE PROPOSED.

IN DISCUSSING WITH OTHER MEMBERS OF CONGRESS THE WATER SHORTAGES WE WERE FACING IN CENTRAL KENTUCKY, I FOUND THAT THIS IS NOT A UNIQUE REGIONAL PROBLEM; IT IS A NATIONAL PROBLEM.

NEW YORK STATE AND NEW YORK CITY, BOSTON, PENNSYLVANIA, CALIFORNIA, THE MIDWEST AND PARTS OF THE SOUTHEAST AND WEST...ALL ARE FACING IMMINENT THREATS TO THEIR WATER SUPPLIES.

THE DEFICIT SUPPLY PROBLEM IS COMPOUNDED BY AN EVEN MORE OMINOUS THREAT. GROUNDWATER CONTAMINATION CONTINUES TO SPREAD. ALL 50 STATES HAVE REPORTED CASES OF GROUNDWATER POLLUTION.

ANOTHER NEW ELEMENT TO BE CONSIDERED IS THE IMPACT OF GLOBAL WARMING. A HARD SCIENTIFIC DATABASE IS STILL BEING FORMULATED BUT ALREADY THE SPECIALISTS IN THIS NEW FIELD TELL US TO ANTICIPATE SUCH EFFECTS AS RISING TEMPERATURES AND MORE FREQUENT AND MORE SEVERE DROUGHTS.

CURRENT POLICY DOES NOT HAVE THE FLEXIBILITY TO OVERCOME THESE NEW CHALLENGES.

CONSIDER THESE IRONIES AND INCONSISTENCIES:

--OUR CIVIL WORKS POLICY TREATS THE DEVELOPMENT OF WATER SUPPLIES AS A LUXURY AND FLOODING AS AN EMERGENCY. YET INADEQUATE WATER SUPPLIES COULD BE THE GREATEST ENDURING EMERGENCY OUR NATION WILL EVER FACE. OUR WATER POLICY SHOULD REFLECT THAT FACT.

--PRESENT FEDERAL FUNDING FOR CIVIL WORKS WATER PROJECTS IS FOCUSED ON FLOOD CONTROL AND NAVIGATIONAL WATERWAYS. HELPING THOSE WHO ARE RUNNING OUT OF WATER IS AS EVERY BIT AS MUCH A FEDERAL RESPONSIBILITY AS PROTECTING THOSE WHO ARE INUNDATED BY IT. I SUBMIT THAT IT IS NEITHER FAIR, LOGICAL NOR PRUDENT FOR THIS GOVERNMENT TO SAY TO ITS LOCAL COMMUNITIES AND STATES, "IF YOU HAVE A FLOOD, THAT'S OUR PROBLEM: IF YOU RUN OUT OF WATER, THAT'S YOUR PROBLEM."

--THE ARMY CORPS OF ENGINEERS HAS PRESENTED INFORMATION THIS MORNING ABOUT ITS WATER SUPPLY PRICING AND COST ANALYSIS PROCESSES. FROM THE STANDPOINT OF THOSE REGIONS AROUND THE COUNTRY WHICH HAVE BEEN DENIED FEDERAL ASSISTANCE, WE CAN DESCRIBE THE PRESENT PROCESS VERY SUCCINCTLY: "THE RICH GET RICHER". THOSE WITH FLOOD CONTROL PROBLEMS CAN RECEIVE WATER SUPPLY STORAGE AT A DISCOUNT RATE.

--LAND AND CROP IRRIGATION WATER SUPPLY PROJECTS RECEIVE FEDERAL ASSISTANCE. THAT SAME SUPPORT IS DENIED FOR PEOPLE WHO SIMPLY NEED WATER TO LIVE.

--THE FEDERAL GOVERNMENT PLAYS A DIRECT ROLE IN WATER QUALITY AND DISTRIBUTION. FEDERAL FUNDS TO THE TUNE OF 50 BILLION DOLLARS HAVE HELPED CONSTRUCT WASTEWATER TREATMENT FACILITIES.

--WE FUND SEWER SYSTEMS, HELP BUILD WATER TOWERS AND LAY WATER LINES. BUT WE DON'T INSURE THE DEVELOPMENT OF AN ADEQUATE SOURCE OF WATER.

IT'S TIME WE RE-EXAMINED THE FAULTY PREMISE THAT PRODUCED THOSE

INADEQUACIES AND INCONSISTENCIES.

THE OFFICE OF MANAGEMENT AND BUDGET CALLS IT "THE THEORY OF VENDIBLE COMMODITIES"...

ACTUALLY, IT'S AN OUTDATED ASSUMPTION OMB HAS ETCHED IN STONE AS SOME ELEVENTH COMMANDMENT OF PUBLIC WATER POLICY.

THE THEORY IS THAT SINCE STORED WATER CAN BE SOLD FOR RESIDENTIAL AND INDUSTRIAL PURPOSES, WATER SUPPLY PROJECTS SHOULD BE THE EXCLUSIVE RESPONSIBILITY OF STATE AND LOCAL GOVERNMENTS.

WHAT WE HAVE HERE IS A HIGHLY SELECTIVE AND VERY DISCRIMINATORY APPLICATION OF USER FEE POLICY.

BUT WHY JUST FOR WATER SUPPLY? IF YOU CARRIED OUT THE "VENDIBLE COMMODITY" THEORY TO ITS LOGICAL CONCLUSION, WOULDN'T IT ALSO APPLY TO FEDERAL HOUSING, FEDERAL FOOD PROGRAMS, URBAN RENEWAL PROGRAMS AND OTHER NATIONAL ENDEAVORS?

WOULDN'T FLOOD PLAIN RESIDENTS HAVE TO PAY FOR THE FULL COST OF FLOOD CONTROL?

WOULDN'T PLEASURE BOATERS, WATER SKIERS, AND SWIMMERS AT FEDERALLY FUNDED IMPOUNDMENTS HAVE TO PAY A USER FEE?

YES, THEY WOULD...EXCEPT THAT BLIND ADMINISTRATIVE DECISIONS USUALLY HAVE A WAY OF BUMPING INTO THE REALITY OF PUBLIC INTEREST.

AND THAT'S WHEN CONGRESS HAS TO STEP IN AND MAKE PUBLIC POLICIES MATCH PUBLIC NEED. THAT IS WHAT I ASK YOU TO DO TODAY.

CONCLUSION

CONGRESS HAS BEEN STYMIED BY THE THREAT OF THE PRESIDENTIAL VETO LONG ENOUGH. THE ADVERSE CIRCUMSTANCES THAT AFFLICT OUR WATER RESOURCES DEMAND FEDERAL PARTICIPATION.

THAT IS THE INTENT OF THE LEGISLATION I HAVE INTRODUCED, H.R. 1155, THE WATER SUPPLY DEVELOPMENT ASSISTANCE ACT.

AND I AM PARTICULARLY PLEASED TO NOTE AND EXPRESS MY APPRECIATION FOR THE CO-SPONSORSHIP OF FOUR MEMBERS OF THIS SUBCOMMITTEE, MR. ROE, MR. LIGHTFOOT, MR. PALLONE AND MR. COX.

H.R. 1155 MAY NOT CONTAIN ALL THE ANSWERS, BUT I BELIEVE IT IS AIMED IN THE RIGHT DIRECTION.

AT THE VERY LEAST, IT SHOULD SERVE AS A USEFUL STARTING POINT FOR OUR JOURNEY TOWARD THE RESOLUTION OF THIS GROWING NATIONAL DILEMMA.

THE BUDGETARY PROBLEMS WE FACE TODAY SHOULD NOT MAKE US INSENSITIVE TO THE NEEDS OF TOMORROW. THIS LEGISLATION CONSIDERS OUR BUDGET SITUATION.

IT DOES NOT ASK FOR NEW FUNDS TO BE APPROPRIATED. IT ONLY ASKS THAT WATER SUPPLY PROJECTS BE GIVEN EQUAL CONSIDERATION WITH FLOOD AND NAVIGATION PROJECTS FOR FEDERAL COST SHARING.

WE CAN'T SOLVE THE ENERGY CRISIS BY CONSERVING ENERGY, WE CAN'T WIN THE WAR ON DRUGS BY JUST SAYING "NO" AND WE CAN'T SOLVE ALL OUR WATER SUPPLY PROBLEMS BY CONSERVING WATER.

WITH YOUR GUIDANCE, CONGRESS RECOGNIZED THE IMPORTANCE OF LONG-RANGE WATER MANAGEMENT. YOU MUST HAVE THE FORESIGHT TO FINISH THE WORK THAT WAS BEGUN 31 YEARS AGO.

I APPRECIATE THE OPPORTUNITY TO HAVE MET WITH YOU AND THANK YOU FOR YOUR CONSIDERATION OF THE REQUEST THAT I HAVE PRESENTED TODAY.

-END-

Testimony of

MAYOR SCOTTY BAESLER
Lexington, Kentucky

Before the

House Subcommittee on Water Resources

WASHINGTON, D.C.
April 26, 1989

The United States Conference of Mayors

GOOD MORNING MR. CHAIRMAN, I AM SCOTTY BAESLER, THE MAYOR OF LEXINGTON, KENTUCKY. IN ADDITION TO TESTIFYING IN THE CAPACITY AS MAYOR OF LEXINGTON, I AM ALSO TESTIFYING ON BEHALF OF THE UNITED STATES CONFERENCE OF MAYORS, THE ORGANIZATION THAT HAS REPRESENTED AMERICA'S PRINCIPAL CITIES IN WASHINGTON SINCE 1932. IN BOTH OF THESE CAPACITIES, I WOULD LIKE TO THANK YOU FOR HOLDING THESE HEARINGS, AND I WOULD LIKE TO THANK MY CONGRESSMAN, REPRESENTATIVE LARRY HOPKINS, FOR INTRODUCING H.R. 1155, "THE WATER SUPPLY DEVELOPMENT ASSISTANCE ACT."

THE GOAL OF H.R. 1155 IS A GOAL WHICH ALL MAYORS SHARE. THE PRESERVATION AND DEVELOPMENT OF STABLE SOURCES OF WATER SUPPLY FOR OUR CITIZENS, BOTH INDIVIDUAL AND CORPORATE, IS A TOP PRIORITY OF LOCAL GOVERNMENT. WATER, LIKE OTHER BASIC SERVICES, IS TAKEN FOR GRANTED UNTIL A PROBLEM ARISES. WE HAVE SEEN THAT PROBLEM--PROVIDING A SAFE AND ADEQUATE WATER SUPPLY FOR OUR COMMUNITIES--BECOME A MAJOR CONCERN THROUGHOUT THE COUNTRY.

MY TESTIMONY THIS MORNING WILL IMPART TWO VIEWS OF WHY H.R. 1155 DESERVES THE SUPPORT OF THIS COMMITTEE, AND WHY THE CONFERENCE OF MAYORS AND I SUPPORT ITS INTENT. THE FIRST OF THESE VIEWS IS OFFERED ON BEHALF OF THE CONFERENCE OF MAYORS AND WILL ADDRESS THE NEEDS WE HAVE IN AMERICA AS A NATION. THE SECOND IS A VIEW FROM A LOCAL PERSPECTIVE, MY OWN, AND THOSE I REPRESENT FROM LEXINGTON AND THE CENTRAL KENTUCKY AREA.

NATIONAL NEEDS

THAT THE WATER RESOURCES DEVELOPMENT ACT OF 1986 SHOULD BE AMENDED TO PROVIDE FEDERAL COST SHARING FOR WATER SUPPLY PROJECTS IS MADE CLEAR IN THE DECLARATION OF POLICY CONTAINED IN SECTION 1 OF THE BILL. "THERE IS A NATIONAL INTEREST IN THE DEVELOPMENT OF ADEQUATE AND DEPENDABLE SOURCES OF WATER FOR MUNICIPAL AND INDUSTRIAL PURPOSES." THE NATIONAL COUNCIL ON PUBLIC WORKS IMPROVEMENT, IN THEIR REPORT TO CONGRESS ENTITLED FRAGILE FOUNDATIONS, ECHOES THE LEGISLATION'S FINDING THAT, "THE PROVISION OF HIGH QUALITY WATER FOR HUMAN CONSUMPTION AND INDUSTRIAL USE IS A MAJOR COMPONENT OF OUR NATION'S PHYSICAL AND ECONOMIC WELL BEING."

MR. CHAIRMAN, WATER SUPPLY NEEDS ARE OF THREE KINDS:

1) MAINTENANCE AND/OR REPLACEMENT OF EXISTING FACILITIES;

2) EXPANSION OR CONSTRUCTION OF NEW FACILITIES TO ADDRESS GROWTH DEMANDS; AND,

3) INTRODUCTION OF NEW TECHNOLOGY INTO EXISTING FACILITIES IN ORDER TO MEET REGULATORY REQUIREMENTS.

WHILE SOME ASSUME THAT THESE NEEDS CATEGORIES MAY BE SEPARATED BY REGION, THIS IS NOT NECESSARILY THE CASE. WHILE YOUR REGION OF THE COUNTRY, MR. CHAIRMAN, THE NORTHEAST, COMMONLY FACES PROBLEMS IN CATEGORY ONE -- MAINLY PROBLEMS OF DETERIORATION-- IT'S ALSO KNOWN THAT GROWTH OVER THE LAST FEW YEARS HAS MADE MANY CURRENT FACILITIES OBSOLETE. IT IS MY UNDERSTANDING THAT THE CITY

OF NEW YORK, THE GREATEST CONSUMER OF WATER IN THE REGION, IS FACING BOTH DROUGHT CONDITIONS AND CAPACITY LIMITATIONS AND IS LOOKING TO EXPAND ITS CURRENT DELIVERY SYSTEM FROM TWO TUNNELS TO THREE. WHILE SUCH AN INCREASE IS LARGELY A LOCAL ISSUE, IT IS CLEARLY OF NATIONAL INTEREST THAT NEW YORK AND ITS SUBURBS HAVE AN ADEQUATE WATER SUPPLY. IN ADDITION, THE PRESERVATION AND MAINTENANCE OF THE NEW YORK CITY SYSTEM PRESERVES THE PRECIOUS COMMODITY OF WATER FOR UPSTATE NEW YORK. THE ISSUE OF ONE CITY'S NEEDS ARE INDEED ISSUES FOR AN ENTIRE REGION AS WELL.

WHILE IT IS ALWAYS DIFFICULT TO ESTIMATE NEEDS ON A NATIONAL LEVEL, THERE HAVE BEEN SIX "CORE" STUDIES CONDUCTED IN THE 1980'S ON WATER SUPPLY NEEDS. ACCORDING TO THESE SIX STUDIES, THE RANGE OF ANNUAL NEEDS IN 1982 DOLLARS, STRETCHES FROM A LOW OF $4.4 BILLION TO A HIGH OF $10.7 BILLION. FURTHER, WADE MILLER ASSOCIATES ESTIMATES THAT OF THESE COSTS, SOME $400 MILLION TO $900 MILLION ARISE EACH YEAR AS A RESULT OF THE STATUTORY REQUIREMENTS OF THE SAFE DRINKING WATER ACT.

A LOCAL/REGIONAL PERSPECTIVE

NOW, MR. CHAIRMAN, I WOULD LIKE TO GIVE YOU YOU A BRIEF OVERVIEW OF A LOCAL PERSPECTIVE. LEXINGTON-FAYETTE COUNTY IS LOCATED IN THE CENTRAL PART OF THE STATE. OUR WATER SOURCE IS THE

KENTUCKY RIVER. OVER THE LENGTH OF THE KENTUCKY RIVER BASIN, SOME 500,000 PEOPLE IN 14 COMMUNITIES DRAW THEIR WATER FROM THE RIVER.

IT IS FAIR TO SAY THAT LAST SUMMER'S WATER SHORTAGE AND DROUGHT HAD A PRONOUNCED EFFECT UPON MOST PEOPLE LIVING IN THE BLUEGRASS AREA. WE WERE SUFFERING, LIKE MANY PARTS OF THE COUNTRY, FROM A "100 YEAR DROUGHT". FOR THE FIRST TIME, SINCE THE 1930'S, WATER EMERGENCIES AND CUTBACKS WERE INSTITUTED WHICH IMPOSED PERSONAL AND ECONOMIC CONCERNS REGION-WIDE.

ALTHOUGH GROWTH AND DEVELOPMENT HAD RAISED CONCERNS REGARDING ADEQUATE WATER SUPPLIES FOR VARIOUS PARTS OF THE STATE OF KENTUCKY IN PRIOR YEARS, LAST SUMMER'S DROUGHT HAS MADE US TAKE A SERIOUS LOOK AT BOTH LONG RANGE AND IMMEDIATE ISSUES REGARDING OUR REGION'S WATER SUPPLY. WE HAVE FORMED A REGION-WIDE STEERING COMMITTEE AND HAVE BEEN TAKING A COMPREHENSIVE LOOK AT POPULATION PROJECTIONS, INDUSTRIAL USE DEMAND, CONSERVATION TECHNIQUES, AND VARIOUS ALTERNATIVES ON NEW IMPOUNDMENTS AND OTHER PHYSICAL STRUCTURES. WE ARE LOOKING AT THESE ALTERNATIVES IN LIGHT OF SHORT TERM AND LONG TERM NEEDS.

WE HAVE A LOCK AND DAM SYSTEM ON THE KENTUCKY RIVER WHICH PROVIDES FOR TRANSPORTATION AND POOLS FOR WITHDRAWAL OF WATER FOR CONSUMPTIVE PURPOSES. THAT LOCK AND DAM SYSTEM WAS LARGELY CONSTRUCTED IN THE LATE 1800'S, AND SINCE 1880 HAS BEEN OWNED AND MAINTAINED BY THE FEDERAL GOVERNMENT. THE SYSTEM IS NOW IN THE

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PROCESS OF BEING TURNED OVER TO THE STATE OF KENTUCKY. THE LOCK AND DAM SYSTEM HAS SOME VERY SERIOUS PHYSICAL PROBLEMS THAT MUST BE ADDRESSED IMMEDIATELY. SOME PEOPLE IN OUR STATE FEEL THAT THE PROBLEMS SHOULD BE ADDRESSED BY THE FEDERAL GOVERNMENT BEFORE BEING TURNED OVER TO THE STATE. IN ANY CASE IT IS IMPERATIVE THAT ACTION BE TAKEN SOON. SEVERAL MULTI-MILLION DOLLAR REPAIR PROJECTS MUST BE UNDERTAKEN WITHIN THE NEXT 5-10 YEARS IN ORDER TO MAINTAIN THAT SYSTEM WHICH NOW IS THE MAIN SOURCE OF WATER SUPPLY FOR HALF A MILLION PEOPLE.

IN ADDITION, HOWEVER, WE HAVE IDENTIFIED A NEED FOR OTHER PHYSICAL STRUCTURES IN ORDER TO MEET THE DEMAND FOR WATER SUPPLY IN CENTRAL KENTUCKY FOR THE NEXT 10-30 YEARS AND BEYOND. THE NEED FOR A REGIONAL WATER SUPPLY IMPOUNDMENT LOCATED ON A TRIBUTARY OF THE KENTUCKY RIVER WAS IDENTIFIED BY THE CORPS OF ENGINEERS IN 1978 AND IN 1988. COSTS ESTIMATES RANGE FROM $26 TO $45 MILLION. IT IS IN THE AREA OF SOURCES OF WATER SUPPLY--PARTICULARLY REGIONAL IMPOUNDMENTS AND RESERVOIRS--THAT LOCAL COMMUNITIES ARE LEAST ABLE TO PROVIDE FOR THEMSELVES. THE COSTS ARE OVERWHELMING AND THE LOCAL JURISDICTIONAL BOUNDARIES COMPLICATE THE ISSUE OF REGIONAL SUPPLY.

MR. CHAIRMAN, IN ORDER TO MEET THESE NEEDS, AND INDEED FOR SIMILAR SITUATIONS ACROSS THE ENTIRE COUNTRY, WE PROPOSE THAT THERE BE A COMBINED FEDERAL-STATE-LOCAL-CONSUMERS EFFORT ESTABLISHED.

AT THE CONSUMER LEVEL, WE ARE SUGGESTING THAT PARTICIPATION COME BOTH IN THE FORM OF SHARING COSTS AND CONSERVATION. WATER CONSERVATION SHOULD BECOME A PART OF EVERYDAY LIFE. EDUCATION AND AWARENESS ARE VITAL TO ACHIEVING THIS GOAL. TECHNOLOGICAL MEASURES ARE ALSO IMPORTANT AND SHOULD BE INSTITUTED. IN OUR PROPOSED MODEL NO COMMUNITY COULD QUALIFY FOR COST-SHARING WITHOUT A COMMITMENT TO AN ESTABLISHED LEVEL OF CONSERVATION.

LOCAL GOVERNMENTS, OF COURSE, WILL NEED TO PARTICIPATE IN THE PLANNING, FUNDING, AND IMPLEMENTATION OF ANY WATER SUPPLY MEASURES UNDERTAKEN. LIKEWISE, WE FEEL STATE GOVERNMENT AND FEDERAL GOVERNMENT PARTICIPATION IS KEY--IN BOTH PLANNING AND COST SHARING.

PROVIDING BASIC SERVICES IS THE PRIMARY FUNCTION OF GOVERNMENT -- AT ALL LEVELS. THE PROVISION OF SAFE, PLENTIFUL WATER IS AT THE MOST BASIC LEVEL IN TERMS OF HUMAN REQUIREMENTS FOR EVERYDAY LIFE, FOR THE SUSTENANCE OF A COMMUNITY, AND FOR GROWTH AND DEVELOPMENT OF ANY LOCAL, STATE OR FEDERAL ECONOMY. WE KNOW THAT INDUSTRY IS TAKING A WARY LOOK AT EXPANSION AND LOCATING NEW FACILITIES IN OUR REGION AS A RESULT OF LAST YEAR'S WATER SHORTAGE PROBLEMS -- AND WE ARE AT AN APEX OF WHAT'S REFERRED TO AS THE "GOLDEN TRIANGLE" IN KENTUCKY BECAUSE OF OUR HISTORICALLY GOOD ECONOMY AND POSTURE IN THE STATE OVERALL.

WE ARE CONCERNED, OUR CITIZENS ARE CONCERNED, AND WE FEEL

GOVERNMENT AT ALL THREE LEVELS -- FEDERAL, STATE, AND LOCAL--SHOULD BE CONCERNED AND SHOULD BE INVOLVED IN THE PROCESS OF LOOKING FOR ANSWERS AND IN MAKING THOSE ANSWERS A REALITY.

WE, IN LEXINGTON AND INDEED ALL OF KENTUCKY, SUPPORT THE EFFORTS OF CONGRESSMAN HOPKINS AND THIS COMMITTEE IN AMENDING THE WATER RESOURCES DEVELOPMENT ACT TO PROVIDE FEDERAL COST SHARING FOR WATER SUPPLY PROJECTS. WE CONSIDER IT VITAL TO THE COMBINED EFFORT WE ARE SUGGESTING WHICH CAN ENSURE THAT THE LIFEBLOOD OF OUR COMMUNITIES ACROSS THIS COUNTRY IS NOT THREATENED.

THANK YOU, MR. CHAIRMAN, FOR YOUR TIME AND INTEREST IN OUR COMMENTS.

Mr. NOWAK. Let us now turn briefly to another colleague from Kentucky who has expressed great concern about this problem. The Honorable Carroll Hubbard is with us also, and we are happy to have him appear before the Committee.

I know he had other meetings today on other committees working on some issue in the Banking Committee.

It is nice to have you here, Mr. Hubbard.

TESTIMONY OF HON. CARROLL HUBBARD, A REPRESENTATIVE IN CONGRESS FROM KENTUCKY

Mr. HUBBARD. Thank you very much, Mr. Chairman. I appreciate Chairman Henry Nowak, with whom I came to Congress in January 1975. I appreciate the chance to appear before your House Subcommittee on Water Resources.

To you the Chairman and each of the members, I appreciate your allowing me to testify briefly here on behalf of changing our water policy and on behalf of the bill introduced by my friend and colleague, Congressman Larry Hopkins, House Bill 1155.

I do apologize for being late. It is true the House Banking Committee is in a mark up and I had two amendments this morning and could not leave until I finished the second one.

It is a joy to appear with Congressman Perkins and also to appear with the head of the Lexington, Kentucky Fayette County Government, Scotty Baesler.

In my area of the world they still remember him as the great University of Kentucky basketball player and then they have to be reminded that he also is the head of the Government up at Lexington and Fayette County, the home of the University of Kentucky.

Mr. Hopkins, if my constituents knew that I did not try to help Mr. Hopkins they would be upset. He was born and raised in my home county and is very much liked also in Western Kentucky.

I would ask unanimous consent that my statement appear in the record in its entirety.

Mr. NOWAK. Without objection, so ordered.

Mr. HUBBARD. I will not give all of it. But America's water policy indeed is antiquated, discriminatory and inadequate, and does not meet the needs of our Nation. It only involves provision for flood control and navigable water systems.

Unfortunately, we have not until now even suggested a provision for those states lacking an adequate water supply. Water, as we know, is essential for life.

Recently, our Nation has suffered from multiple years of deficit rainfall and a serious increase in ground water pollution. The combination of these natural occurrences has adversely affected a large number of states and was more fully manifested last year in the drought, the famous drought of 1988, which indeed affected much of Kentucky, including for sure the 24 counties in Western Kentucky, which I represent.

The drought of last year made water resource policy and water resource planning grave realities in many communities in Kentucky and elsewhere.

Never before has it become more important or more critical for small towns across the Nation to initiate a future water resource strategy.

And I can be a spokesman for small towns since the largest community in my district is Aduca, Kentucky, population 29,000.

National interest in the development of adequate and dependable sources of water for municipal and industrial purposes does not appear to exist in what has become an obsolete national water policy. There is no provision for funding water supply projects in our current law.

While Federal water policy allows for the development of recreational and flood control projects, the municipal and industrial water suppliers were excluded from Federal consideration. Yes, water supply is a growing national problem.

Therefore, Congressman Hopkins' sensible solution, House Bill 1155, the Water Supply Development Assistance Act allows municipalities and localities to receive Federal assistance for the maintenance and operation of municipal and industrial water supplies.

I was honored to speak on the House floor last Congress to express my support for this legislation. I look forward to having other opportunities during this Congress to support this particular legislation, which Congressman Hopkins and others have brought before us for consideration.

Again, Mr. Chairman, thank you for the opportunity and the privilege of appearing before you and your Subcommittee.

[Mr. Hubbard's prepared statement follows:]

APRIL 26, 1989

U.S. REP. CARROLL HUBBARD

TESTIMONY BEFORE THE HOUSE SUBCOMMITTEE ON

WATER RESOURCES

I WOULD FIRST LIKE TO THANK MY ESTEEMED COLLEAGUE, U.S. REP. HENRY J. NOWAK, CHAIRMAN OF THE SUBCOMMITTEE ON WATER RESOURCES, AS WELL AS THE MEMBERS OF THIS SUBCOMMITTEE, FOR CONDUCTING NEEDED HEARINGS ON THIS NATION'S FEDERAL WATER POLICY. I WOULD ALSO LIKE TO ENDORSE AND COMMEND MY DISTINGUISHED COLLEAGUE FROM KENTUCKY, U.S. REP. LARRY HOPKINS, FOR HIS DILIGENT WORK TOWARD THE INTRODUCTION OF IMPORTANT LEGISLATION TO RESTRUCTURE AND REDIRECT OUR NATION'S WATER POLICY TO MEET THE NEEDS OF OUR COUNTRY.

AMERICA'S WATER POLICY IS ANTIQUATED, DISCRIMINATORY AND INADEQUATE, AND DOES NOT MEET THE NEEDS OF OUR NATION. IT ONLY INVOLVES PROVISIONS FOR FLOOD CONTROL AND NAVIGABLE WATER SYSTEMS. UNFORTUNATELY, WE HAVE NOT, UNTIL NOW, EVEN SUGGESTED A PROVISION FOR THOSE STATES LACKING AN ADEQUATE WATER SUPPLY. THIS IS A TERRIBLY GROSS OVERSIGHT! WATER, AS WE KNOW, IS ESSENTIAL FOR LIFE. NO ORGANISM, NO CREATURE, REGARDLESS OF HOW GREAT OR SMALL, CAN FUNCTION WITHOUT IT.

RECENTLY, OUR NATION HAS SUFFERED FROM MULTIPLE YEARS OF DEFICIT RAINFALL AND A SERIOUS INCREASE IN GROUNDWATER POLLUTION. THE COMBINATION OF THESE NATURAL OCCURRENCES HAS ADVERSELY AFFECTED A LARGE NUMBER OF OUR EASTERN UNITED STATES AND WAS MORE FULLY MANIFESTED IN THE DROUGHT OF 1988. THE DROUGHT OF 1988 MADE WATER RESOURCE POLICY AND WATER RESOURCE PLANNING GRAVE REALITIES IN MANY COMMUNITIES IN THE DISTRICT I AM PROUD TO REPRESENT IN KENTUCKY, AS WELL AS IN COMMUNITIES ACROSS THESE UNITED STATES. NEVER BEFORE HAS IT BECOME MORE IMPORTANT OR MORE CRITICAL FOR SMALL TOWNS ACROSS THE NATION TO INITIATE A FUTURE WATER RESOURCE STRATEGY.

NATIONAL INTEREST IN THE DEVELOPMENT OF ADEQUATE AND DEPENDABLE SOURCES OF WATER FOR MUNICIPAL AND INDUSTRIAL PURPOSES DOES NOT APPEAR TO EXIST IN WHAT HAS BECOME AN OBSOLETE NATIONAL WATER POLICY. THERE IS NO PROVISION FOR FUNDING WATER SUPPLY PROJECTS IN CURRENT LAW. WHILE FEDERAL WATER POLICY ALLOWS FOR THE DEVELOPMENT OF RECREATIONAL AND FLOOD CONTROL PROJECTS, MUNICIPAL AND INDUSTRIAL WATER SUPPLIERS WERE EXCLUDED FROM FEDERAL CONSIDERATION. YES, WATER SUPPLY IS A GROWING NATIONAL PROBLEM.

AS I STATED BEFORE, WATER IS ESSENTIAL FOR LIFE AND CONGRESS MUST NOT ALLOW THIS LIFELINE TO BE SEVERED. THEREFORE, MR. HOPKINS' SENSIBLE SOLUTION, H.R. 1155, THE WATER SUPPLY DEVELOPMENT ASSISTANCE ACT, ALLOWS MUNICIPALITIES AND LOCALITIES TO RECEIVE FEDERAL ASSISTANCE FOR THE MAINTENANCE AND OPERATION OF MUNICIPAL INDUSTRIAL WATER SUPPLIES. THIS MEASURE PROVIDES LOCALITIES WITH ACUTE WATER SUPPLY PROBLEMS AN OPPORTUNITY TO SHARE THE COST OF DEVELOPMENT WITH THE FEDERAL GOVERNMENT. THIS LEGISLATION WILL ALLOW SMALL COMMUNITIES THE ABILITY TO AFFORD THE WATER THAT IS ESSENTIAL IN EVERYDAY LIFE. BY AMENDING PRESENT LAW TO ESTABLISH A 65 PERCENT FEDERAL COST-SHARING FORMULA FOR WATER SUPPLY PROJECTS WE CAN ADD BOTH EQUITY AND LOGIC TO OUR NATION'S WATER POLICY.

MR. CHAIRMAN AND MEMBERS OF THIS SUBCOMMITTEE, I WAS HONORED TO SPEAK ON THE HOUSE FLOOR IN THE 100TH CONGRESS TO EXPRESS MY SUPPORT FOR THIS LEGISLATION. LAST YEAR, ON SEPTEMBER 30, I SPOKE TO ENCOURAGE THAT THE LEGISLATION SPONOSORED BY MY COLLEAGUE FROM KENTUCKY BE GIVEN EXPEDITIOUS COMMITTEE CONSIDERATION IN AN EFFORT TO CHANGE THE WATER SUPPLY POLICY IN THIS COUNTRY. I AM PLEASED TO APPEAR HERE TODAY TO PARTICIPATE IN THE CREATION OF A STRONGER WATER POLICY, AND I URGE MY COLLEAGUES TO GIVE IT THEIR UTMOST ATTENTION AND TO RECTIFY OUR CURRENT WATER POLICY.

Mr. NOWAK. Well, let me thank each of you for taking the time to look and evaluate your individual positions and yet working together collectively so that we could bring that kind of a consensus to the other members of the Committee as we go forward in this area.

In working with the League of Cities and hopefully the Governor's Association also we could formulate something that solves not only this problem, but as I mentioned before in my statement to you, that we look at the broader aspects of water supply and how that should fit into a revised policy for the United States.

We have established water policy, unfortunately, in an uncoordinated fashion starting back in the 1800's and every little piece that was necessary then is not true today. We have changing economy. We have different water needs. We have different demands that perhaps had to be subsidized back in especially the 17 Western states, but that is changing now.

Our whole agricultural community that has used irrigation perhaps should be relooked at. The mention of what we do locally with such water uses as golf courses, that should be on the same basis as somebody drinking water.

We were down in Texas for hearing and it was brought so vividly to our attention because we were looking on one side of a street that was occupied by what is commonly known as the colonials or some Mexican American who had crossed the border and established little communities, unfortunately, did not have sewage or did not have drinking water. And 30 feet away on the other side from where they were living was a palatial golf course and the water was just pouring out watering the grass. And it was a situation where you had 5,000 people watching this water flow and no line across the street.

So we have got different demands I guess than we have had years ago, and hopefully we can get an overall look with your continued cooperation.

This Committee would like to move this year in getting something out to start to coordinate all of those programs that are out there and make some overall impact.

And, as I say, one of the initiatives is the White House Conference on water to start to look at this and bring in the private and public sectors, including, of course, your organizations and hopefully we will be able to aide some of your constituents.

Thank you again for coming as a panel, and we appreciate your time. We will look forward to working with you in the future.

Mr. STANGELAND. Mr. Chairman is obviously not a golfer. [Laughter.]

Mr. NOWAK. Our next panel will be those that in the Federal agencies have worked in this area and have formulated the policies, mainly as directed by the Congress over this multi-year period. And we are looking forward to receiving their testimony.

And if I could, without objection, I will have the three agencies to the table together because I think all the questions will be interrelated and I think there is an overlapping that could become made more evident if we had all three agencies to the table.

And if I could, I would now to have the Department of Army Corps of Engineers represented by Dr. G. Edward Dickey, who is

the Deputy for Policy and Evaluation Office of the Assistant Secretary of the Army for Civil Works.

I understand he is accompanied by Donald B. Duncan, Chief of Policy Development Branch, Corps of Engineers.

From the Department of Interior, Bureau of Reclamation we have C. Dale Duvall who is the Commissioner, Bureau of Reclamation and the Department of Agriculture Soil Conservation Service, Howard C. Tankersley, who is the Director of the Watershed Projects Division.

Gentlemen, welcome to the Committee. I think it was well that you heard our opening statements and our opening witnesses, and I hope that you can address some of the points they made and the problems that you heard them express.

And we will start with Mr. Edward Dickey. I will just state for the record that your total statements in their full form will be inserted in the record, and I will let you proceed as you desire.

TESTIMONY OF A PANEL CONSISTING OF G. EDWARD DICKEY, DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS, DEPUTY FOR POLICY AND EVALUATION OFFICE OF THE ASSISTANT SECRETARY OF THE ARMY FOR CIVIL WORKS, ACCOMPANIED BY DONALD B. DUNCAN, CHIEF OF POLICY DEVELOPMENT BRANCH CORPS OF ENGINEERS; C. DALE DUVALL, COMMISSIONER, BUREAU OF RECLAMATION, DEPARTMENT OF THE INTERIOR; HOWARD C. TANKERSLEY, DIRECTOR, WATERSHED PROJECTS DIVISION, DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE

Mr. DICKEY. Thank you very much, Mr. Chairman, members of the Subcommittee.

I am G. Edward Dickey, Deputy for Policy and Evaluation, in the Office of the Assistant Secretary of the Army for Civil Works. With me today is Mr. Donald B. Duncan, Chief of the Policy Development Branch with the Army Corps of Engineers Civil Works Directorate.

I am pleased to represent the Department of the Army before this Subcommittee to discuss the Army's role in assisting states and local interests in the development of their water supplies.

Mr. Chairman, I will summarize my remarks and focus on our general authorities and our pricing policies and leave to any questions any concerns with regard to our emergency authorities for providing water.

Mr. NOWAK. Fine.

Mr. DICKEY. In the area of municipal and industrial water supply, the Army derives it general authority from the Water Supply Act of 1958, as amended, and Section 6 of the Flood Control Act of 1944. The Water Supply Act of 1958 establishes a policy of cooperation in development of water supply storage for municipal and industrial uses as a purpose of a civil works project when certain conditions of non-Federal participation are met.

Water supply service provided by the Army consists of storage space in a reservoir for use in regulating the flow of water so that it is useful for water supply purposes by the non-Federal sponsor.

Water supply contracts do not involve the sale of water. Any necessary water rights are obtained by the non-Federal sponsor.

Before municipal and industrial water supply storage space is included in a civil works project, the demand for municipal and industrial water in the region of the project and the alternatives for meeting that demand are evaluated. If including water supply storage in a Federal project is the most economic alternative for the sponsor for meeting the need for water supply, and if the addition of water supply storage represents the best use of the storage space when compared to its use for other purposes, such storage may be provided if the sponsor agrees to the required financial commitment.

Provision for water supply storage can be made at completed projects as well as projects in the planning stage. At the present time, the Army operates 115 such projects containing about 9.5 million acre feet of storage for municipal and industrial water supply. This represents an investment of over $1 billion in water supply and this $1 billion, I might add, compares to the total investment in the civil works program of about $70 billion. So as you can see water supply historically has not commanded a large share of the civil works investment dollars.

With regard to our general authorities, I mentioned Section 6. Section 6 of the Flood Control Act of 1944 authorizes the Secretary to enter into contracts with states, municipalities, private concerns, or individuals for the use for domestic and industrial purposes of surplus water available at Army reservoirs. These contracts provide for the use of stored water for a specific period of time pending development of the authorized purpose.

These then are the two general authorities under which we operate, and let me turn then to the pricing policies that compliment these authorities.

With regard to storage, our pricing policies can be grouped into three categories. The first category is storage not under contract, but included in an existing reservoir for future municipal and industrial use. At present we have about 1 million acre feet of uncontracted for storage. The second category addresses the construction of new reservoirs that include water supply storage when it makes economic and environmental sense. Lastly, the third category covers cases where we take storage away from other project purposes for water supply use. This reallocation of storage for water supply is becoming increasingly important in areas where uncontracted for storage is not available. Modification of existing projects in this manner allows us to better meet contemporary demands and to manage our projects in accord with new priorities.

Because water supply is a private economic good, it is sometimes provided by private suppliers, although state and local governments supply most of the water for municipal and industrial use in the United States. As a private economic good, municipal and industrial water supply is a fully vendible output. That means it is a good similar to those produced in the market sector, and its cost can be fully recovered from users if the service is a sound economic investment. As a fully vendible service, users should pay the full cost of storage space in new Army projects. This ensures that only sound economic choices will be made with regards to the use of

water and the pace of its development. That is why the Army supported the sections of the Water Resources Development Act of 1986 that shortened the repayment terms for water supply and removed certain other subsidies that characterized water supply policies of the past.

Appropriate pricing encourages conservation and wise use of the Nation's limited water resources. Current Army policy requires non-Federal interests to pay annually all operation, maintenance, major rehabilitation, and replacement costs allocated to water supply storage. In addition, capital costs are either paid during construction or recovered overtime, depending on the project and the type of storage.

Contracts for uncontracted for storage, where municipal and industrial water supply was an original project purpose at existing projects or projects that were under construction prior to the Water Resources Development Act of 1986, for present or future use of water supply storage can be entered into pursuant to the Water Supply Act of 1958. Regardless of whether the contract provides for immediate or future use of storage space, non-Federal interests are required to repay 100 percent of the cost allocated to municipal and industrial water supply plus interest. Where the storage is not to be used immediately, interest begins to accrue after a 10-year interest free period starting from the date of completion at an interest rate determined by the Department of Treasury at the time project construction was initiated. The repayment period for these contracts is 30 years from the plant and service date, or the date on which the first storage contract is signed, whichever is later.

Future use contracts are entered into only if a non-Federal interest agrees to pay the operation and maintenance cost annually beginning with the date the contract is signed. Interest on capital cost is also charged unless the 10 year interest free period has not expired. Payment of these costs are initiated with first use or at the end of the interest free period, whichever occurs first. In any case, investment costs begin to be repaid at the time of first use.

Pricing of new projects reflect the policies contained in the Water Resources development Act of 1986. Specifically, for new reservoir construction, non-Federal sponsors must agree, in addition to funding the operation and maintenance, to pay 100 percent of the costs allocated to municipal and industrial water supply generally using the separable costs remaining benefit method of cost allocation. The Water Resources Development Act of 1986 allows the construction costs to be repaid following construction of the project, however, we make every effort to recover these costs over a shorter period and to have the sponsor pay for the storage space during construction.

We do this for two reasons. First, our outlays for new project construction are constrained by our limited Federal budget, and in fact, we would prefer to look for non-Federal dollars to fund these kinds of costs. And, secondly, we know, because we have done an analysis of the benefits and cost of the project and looked at the alternatives available to the sponsor that the plan which we are pursuing is the most efficient way for the sponsor to meet its future demand for water. Accordingly, the users of the water sup-

plies can raise the necessary funds through non-Federal financing sources typically on attractive terms, more typically on terms that are more favorable than available from the Federal Government.

With regard to the question of pricing of reallocated storage at existing projects, something which was addressed earlier today, because we want to make the best use of reservoir storage over time, we are responsive to non-Federal requests to review the use of projects and consider modifications to meet new demands for water supply. The Department of Army will approve the reallocation of storage space from another project purpose only for immediate water use, and then only when to do so results in a better use of the project resources and does not seriously impact other authorized purposes.

The cost to be repaid to the Government for storage space reallocated to water supply is the higher of either the updated cost of construction, or the value of project benefits or revenues foregone as a result of the allocation. These costs may be repaid over 30 years because no new construction is involved and the Federal investment has already been made. The use of this procedure promotes the most economic use of the water resource. It also encourages conservation, reduces conflicts among competing interests, and provides for an appropriate return to the taxpayers who originally financed the project. It also ensures that the reallocation of existing storage space represents the most economic alternative as compared to other alternatives for meeting the evolving demand for water supply.

Turning next to the use of surplus water for municipal and industrial purposes. In accordance with Section 6 of the Flood Control Act of 1944, the Secretary may enter into contracts for the use for domestic and industrial purposes of surplus water available at a reasonable price.

Surplus water contracts commonly involve temporary uses and normally require renewal after a 5 year period. The pricing policy for surplus water contracts requires the user to pay on an annual basis no more than the amount equal to the annual payment the user would be making under the storage reallocation policy.

Turning briefly to the topic of agricultural water supply; the Department of the Army's authority to include facilities for agricultural water supply in a project is provided by Section 8 of the Flood Control Act of 1944, as amended. This authority allows the inclusion of irrigation that is agricultural water supply as an adjunct to Army projects upon the recommendation of the Secretary of Interior. We currently have 52 multiple purpose lake projects with agricultural water supply, all of which are in the 17 Western States. When irrigation features are included in Army reservoir projects in the 17 Western States, the cost of the Army's project that is allocated to the irrigation purpose are recovered by the Secretary of the Interior in accordance with Reclamation Law.

New projects outside the 17 Western States agricultural water supply costs would be cost shared in accordance with the requirements of the Water Resources Development Act of 1986. This Act requires that the non-Federal sponsor assume 35 percent of the project cost allocated to water supply and provide all operation, maintenance, rehabilitation, and replacement costs, or to pay an

amount equal to an amount based on an ability to pay procedure established by the Secretary of the Army, whichever would be more favorable to the beneficiary.

Mr. Chairman, this summarizes our general authorities and our pricing policies that go with those authorities. And, as I said, we have included in our prepared statement information regarding our emergency authorities, but since they seem peripheral at least as far as the discussion goes today, I will stop here.

Thank you.

Mr. NOWAK. Thank you very much.

We will now have a vote and I also have a luncheon presentation that I have to make. If we come back we would only have about 10 minutes before I have to break for a luncheon.

I wonder if it is not inconvenient if we could instead of adjourning in 20 minutes, if we could adjourn now and ask all the witnesses that are at the table and the two others that are scheduled if we could resume our direct testimony at 1:30.

Would that be convenient enough to—could you all come back.

[Affirmative responses.]

Mr. NOWAK. Thank you much. We will stand in recess until 1:30.

[Whereupon, at 12:10 p.m., the Subcommittee adjourned, to reconvene at 1:30 p.m., this same day.]

AFTERNOON SESSION [1:40 P.M.]

Mr. NOWAK. The Subcommittee will come to order.

And again, because of a plane commitment for our out of town witnesses, we are going to have the New York State Department of Environmental Conservation represented by the Deputy Commissioner for Administration and Finance, Ray Torkelson to give us his direct testimony and see if we can move through that so that he may catch an airplane.

Mr. Torkelson, welcome to the Committee. And if you will—we will acknowledge that your testimony in its totality will be incorporated in the record, and you may proceed as you deem necessary.

TESTIMONY OF ROY TORKELSON, STATE OF NEW YORK, DEPARTMENT OF ENVIRONMENTAL CONSERVATION, DEPUTY COMMISSIONER FOR ADMINISTRATION AND FINANCE

Mr. TORKELSON. Thank you very much, Mr. Chairman. I appreciate the accommodation. I also appreciate the accommodation of the Corps of Engineers, the Bureau of Reclamation, and the Soil Conservation Service.

Mr. Chairman, I am Deputy Commissioner Roy Torkelson of New York State Environmental Conservation Department. I am here today to testify and support Congressman Hopkins' proposal to finance water supply at a 65/35 Federal to state cost share.

There is no question that the communities of New York State would benefit from this proposal. There are now water shortages in 58 communities in New York State amounting to 144 million gallons today, which were identified recently in a state adopted water resources strategy, a document which I provided to your staff.

If New York City is included, at least another 260 million gallons per day can be added to that figure. We estimate the cost to remedy our total water infrastructure problem at $8.8 billion.

Financial incentives, as you know, help municipalities make infrastructure decisions that are necessary for the future rather than wait for a crisis to deal with them. Congressman Hopkins' proposal might supply that incentive.

This proposal, if adopted, would be historic in nature, since it would mark a departure from what has been the traditional position of the Federal Government, namely, that there is no Federal financial participation in water supply.

This position has always been a perplexing one for us. Water is a basic human need. It is a prerequisite for industry and commerce. Its availability not only satisfies the health, safety, and general welfare tenants of good Government, but also its use and availability are critical to the economic success of our private sector.

Therefore, incentives to ensure that the private sectors develops, treats, transmits, and distributes water on demand must become a Federal purpose.

Recently the Congress adopted cost sharing formulae for a variety of Federal purposes in the Water Resources Development Act of 1986.

As we understand it, the principle under which these cost sharing formulae were derived was based upon whether expenses for a project could be borne equitably by beneficiaries.

Only those projects and purposes for which the identification of a beneficiary was difficult were included as a Federal interest. Water supply projects, therefore, were not included.

As a State, we have historically argued for Federal financial participation to help meet our overall water supply needs. Until now, we have not been successful because water supply is more easily tied to beneficiaries than the projects that are covered in the Water Resources Act.

However, since the cost to our citizens for water, waste water, garbage, and other environmental necessities is growing in leaps and bounds, we must find ways to reduce the overall user cost for environmental infrastructure while assuring adequate safe air and water for their consumptive use. It is time for the Federal Government to help us in this area.

Earlier this month, New York State Commissioner of Environmental Conservation, Thomas Jorling, testified before Congress for funds to help us develop water conservation plans and programs for local Governments. This was motivated by a drought emergency declared by Governor Cuomo on March 16, 1989.

We have a water shortage and other serious supply problems throughout the State. On Long Island there is mandatory water withdrawal caps to protect the sole source aquifer from contamination.

In the Finger Lakes area and in Southeastern New York the reservoirs are down. In fact, the City of New York's reservoirs are down 165 billion gallons or 30 percentage points below from where they should be at this time.

The impact of this extends beyond the 9 million people and industries that live and work in New York City. Many other communities use and depend upon the water that the city has developed.

In fact, if those communities who use New York City's water were aggregated into one system, it would be the third largest water system in the State, following the City of Buffalo.

Besides being a regional system, the New York system is also an inter-state water supply. The people and industry in Philadelphia, Pennsylvania, and Camden, New Jersey, depend on the releases from the New York City reservoirs to maintain safe salinity levels of their water supplies.

In a drought, without the reservoir releases from New York City, these supplies will become contaminated. Even the shell-fishing industry in the Delaware Bay depends on those releases from the New York City system.

You should know that there is increasing pressure to expand this regional capacity even more. Nassau County on Long Island may need New York City water. Other municipalities in the Hudson Basin are also looking to the New York City system to supply them with additional water.

Part of the solution to the problems in each part of our State is to create new source development for municipal and industrial uses.

As I mentioned, there are a number of water systems that need additional capacity aside from the City of New York. Obviously those municipalities would benefit from any assistance that could be provided for this purpose.

The Bill that Congressman Hopkins is proposing is a step in that direction.

If I may take a minute, the water problems facing New York State are not simply supply problems alone. There are tremendous needs for upgrading distribution lines and providing water treatment facilities.

We in New York believe that the Federal Government must also financially help us here. Consequently, we have explored and discussed many other options.

One of them is a loan program that could be structured like the Clean Water Act's State Revolving Loan Program. This would help in the financial problems that the Federal Government faces insofar as not having a continuous grant program, but could be provided to us in capitalization grants over a fixed period of time.

New York State has developed a program for the Waste Water Program which we could use in the water area to leverage Federal capitalization funds in the bond market to allow more projects to be built at a quicker pace.

From the State's perspective, this kind of revolving loan program has a number of advantages, provided that the program is adequately capitalized. Some of those include:

One, the maintenance of loan responsibility and accountability of a loan program places the maintenance of responsibility locally for the delivery of services. Funding priorities are locally established.

Market enforcement of operation and maintenance is a natural result of a loan program. I am a member of the New York City Water Finance Authority. As you know, the Buffalo community

has also established one in statute, but New York City's is now operational.

I can attest to you that there is a discipline from the bond market that has helped very much in the management, operation, maintenance, and long term viability of the New York City system.

Predictable levels of funding that might come from a loan program, once fully capitalized, help our local governments plan and know what to expect financially.

When we have to go through the normal budgetary processes, those kind of predictable funding levels are hard to anticipate. A loan program would stabilize that.

Project scheduling could become more expeditious and timely, therefore, bringing down costs. Once established, the Federal Government then could turn its resources to other things that we need them to do in areas of research, development, standards, technology, technology transfer.

Cities like New York, Buffalo, and from what we have heard, Lexington, Kentucky, today would benefit immediately from an infrastructure loan program like the one I have outlined.

The needs in the Buffalo system are significant. They are in the neighborhood of $125 million plus. The ability of the city to move immediately, using a loan program, and, on a perpetual basis, to anticipate being able to be helped for other O&M and infrastructure needs in the water area would be a tremendous help to the industrial base of that city.

Water supply is only one of a myriad number of services for which local governments are responsible. On the local side they are accountable for sewage, solid waste, hazardous waste disposal.

Local officials are responsible for recreation, education, transportation and the full panoply of Governmental services. All of these are under constant regulatory and budgetary pressures.

The people that are responsible and accountable for the delivery of these services are not experts. They depend on us at the state and Federal level to help them through the both the regulatory and the financial mire.

While the subject of today's hearings is water supply, we think a loan program which would allow the entire gamut of environmental infrastructure to be capitalized in one fund is another idea worthy of consideration.

Mr. Chairman, thank you very much for the opportunity to be heard. I would be pleased to answer any questions you may have.

Mr. NOWAK. Mr. Pike, do you have anything further you would add at this point?

Mr. TORKELSON. I should introduce Mr. Pike. I apologize. He is the Director of our Bureau of Water Resource Development, and is responsible, Mr. Chairman, for the staffing work that went into our statewide water supply strategies which are not only in a summary fashion here, but also broken down into various regions of the State, including the Erie/Niagara frontier.

Mr. NOWAK. One of the areas that I think we have had somewhat of an impact when the Federal Water Standards of 1972 came out, there was a funding mechanism incentive to join into the program. And as we get into finer definitions of safe drinking water,

we are celebrating I guess the first week of May the Safe Drinking Water Week.

The whole program, especially the technological base, which is going to be necessary, I believe, could be helped as you described it with some kind of a loan incentive program.

And I guess earlier I had made some remarks about trying to incorporate all of this together and look at a base of support out there first coming from the communities as an incentive to start to look at both sides of the water question and try to coordinate some broad measures.

I wonder if you could tell us, since you have accomplished I think the first effort with your survey in New York, if other Governors or the Governors Association, or your counterparts in other states are undertaking a similar kind of information based survey?

Mr. TORKELSON. I know that we are familiar with a number of studies that were done at the Congressional level to try to get a handle on the environmental infrastructure problem. And the one thing that became very apparent was the lack of coordinated collection of data and information using standard definitions for the various components of water, waste water and so forth.

And as a result, when we reflected on the issues identified in those study groups, the State decided to at least try to take a stab on its own to put together such a study.

We felt it was necessary to have a guide, some sort of a bible, if you will, that would not only help the state and Federal government, but also local government's in the decision making process to determine where they should best invest their resources.

For example, there are some communities that have sufficient supply, but have a high leakage rate. Some of them might conclude that an additional supply is the answer to the question.

This kind of a document will help guide them toward proper O&M types of programs to repair their leaking pipes before they seek to develop new supplies.

As a result, we have shared this kind of information and our data gathering methodology, which is organized in our State around our river basins and water supply basins, with many other professionals in the water business through our association with national groups.

They are looking at it and I think they need some encouragement to do similar strategies because, if we are going to put up financial incentives, we need these kind of guides to ensure that we in fact are investing our money in the correct way.

We should not build supply we do not need if we have other problems that could conserve the supply we have and use it properly.

Just to give you a second example, the outcome of studies like this, outcomes of the efforts for us to create public authorities or utility operations for places like New York City, has resulted in them going to metering, a very important issue for determining what your true need is.

In the case of the City of New York, before we would entertain, for example, a new source supply, we would require them to meter their customers to know what their true water demand is. This

could be compared to their supply to correctly judge their need to augment it.

The city is now in the process of installing meters and expects to finish that in five to seven years.

So these kind of planning documents and the encouragement for these is, in fact, helping us move to make correct decisions with the scarce resources that we all have.

And so, your efforts, for example, to call on a White House Commission is very important to start to state those principles. They are basically capital planning types of principles, utility operation principles.

When you have to put up your money or we have to put up ours to match it, we should be confident we are making the wisest use of that resource for our citizens in the future.

Mr. NOWAK. Thank you very much. We will have further questions, I am sure, from your testimony, especially as we get an opportunity to go through your survey, which I think is very helpful to establish a base and could be a useful tool for a White House Conference, once it is put into place.

I appreciate your taking the time. I know you have a flight problem and we will turn you over to Arlan Stangeland at this time, but we will get back to you and we are going to keep the record open so we can fill in any gaps in the future.

But thank you very much for coming.

Mr. TORKELSON. Thank you, Mr. Chairman.

Mr. NOWAK. Mr. Stangeland.

Mr. STANGELAND. Thank you, Mr. Chairman.

Mr. Torkelson and Mr. Pike, I have no questions.

But may have some written questions to submit at a later time and bon voyage.

Mr. TORKELSON. No problem. I will be very pleased to come down at anytime and work with your staffs to answer any questions you may have.

Mr. NOWAK. And I just want to introduce everybody here, John Paul Hammerschmidt, who, of course, is the ranking minority member to the full Committee joined us and has expressed a great interest in this subject and is working with us to try to formulate this White House Conference.

So many issues of these issues will hopefully come up in a much broader sense with the help of the Administration, especially our new EPA head, Mr. Riley, to pull these programs together and try to finalize something that is cost effective, and yet is going to start us on the road to getting this job done.

But, again, Mr. Hammerschmidt, certainly yield to him if he had any comment at this time.

Mr. HAMMERSCHMIDT. Thank you very much, Mr. Chairman.

And I do have a great interest in this, but I know that we have a number of witnesses waiting to testify, and you are running late for an airplane. So I am not going to ask any questions.

But we do appreciate your being here very much.

Mr. TORKELSON. Thank you, sir.

Mr. HAMMERSCHMIDT. We appreciate your testimony.

Mr. TORKELSON. Thank you very much.

[Mr. Torkelson's prepared statement follows:]

WATER SUPPLY AUTHORIZATION

TESTIMONY

BEFORE THE

HOUSE OF REPRESENTATIVES

SUBCOMMITTEE ON WATER RESOURCES

OF THE

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

BY

ROY TORKELSON, DEPUTY COMMISSIONER

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

MR. CHAIRMAN, I AM DEPUTY COMMISSIONER ROY TORKELSON OF THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION. I AM HERE TODAY TO TESTIFY IN SUPPORT OF CONGRESSMAN HOPKINS' PROPOSAL TO FINANCE WATER SUPPLY AT A 65/35 FEDERAL TO STATE COST SHARE.

THERE IS NO QUESTION THAT THE COMMUNITIES OF NEW YORK STATE WOULD BENEFIT FROM THIS PROPOSAL. THERE ARE NOW WATER SHORTAGES IN 58 COMMUNITIES IN NEW YORK STATE AMOUNTING TO 144 MILLION GALLONS PER DAY (MGD) WHICH WERE IDENTIFIED RECENTLY IN THE STATE ADOPTED WATER RESOURCES STRATEGY. IF NEW YORK CITY IS INCLUDED, AT LEAST ANOTHER 260 MGD CAN ADDED TO THAT FIGURE. WE ESTIMATE THE COST TO REMEDY OUR TOTAL WATER INFRASTRUCTURE PROBLEM AT $8.8 BILLION. FINANCIAL INCENTIVES HELP MUNICIPALITIES MAKE INFRASTRUCTURE DECISIONS THAT ARE NECESSARY FOR THE FUTURE RATHER THAN WAITING UNTIL A CRISIS IS UPON THEM. CONGRESSMAN HOPKINS' PROPOSAL MIGHT SUPPLY THAT INCENTIVE.

THIS PROPOSAL, IF ADOPTED, WOULD BE HISTORIC IN NATURE SINCE IT WOULD MARK A DEPARTURE FROM WHAT HAS BEEN THE TRALITIONAL POSITION OF THE FEDERAL GOVERNMENT, NAMELY, THAT THERE IS NO FEDERAL FINANCIAL PARTICIPATION IN WATER SUPPLY. THIS POSITION HAS ALWAYS BEEN A PERPLEXING ONE FOR US. WATER IS A BASIC HUMAN NEED. IT IS A PREREQUISITE FOR INDUSTRY AND COMMERCE TO FUNCTION. ITS AVAILABILITY NOT ONLY SATISFIES THE HEALTH, SAFETY AND GENERAL WELFARE TENETS OF GOOD GOVERNMENT BUT ALSO ITS USE AND AVAILABILITY ARE CRITICAL TO THE ECONOMIC SUCCESS OF OUR PRIVATE SECTOR. THEREFORE, INCENTIVES TO ENSURE THAT THE PUBLIC SECTOR DEVELOPS, TREATS, TRANSMITS AND DISTRIBUTES WATER ON DEMAND MUST BECOME A FEDERAL PURPOSE.

RECENTLY, THE CONGRESS ADOPTED COST SHARING FORMULAE FOR A VARIETY OF FEDERAL PURPOSES IN THE WATER RESOURCES DEVELOPMENT ACT OF 1986. AS WE UNDERSTAND IT, THE PRINCIPLE UNDER WHICH THESE COST SHARING FORMULAE WERE DERIVED WAS BASED UPON WHETHER EXPENSES FOR A PROJECT COULD BE BORNE EQUITABLY BY THE BENEFICIARIES. ONLY THOSE PROJECTS AND PURPOSES FOR WHICH THE IDENTIFICATION OF THE BENEFICIARY WAS DIFFICULT WERE INCLUDED AS A FEDERAL

INTEREST. WATER SUPPLY PROJECTS WERE NOT. AS A STATE, WE HAVE ARGUED FOR FEDERAL FINANCIAL PARTICIPATION TO HELP MEET OUR WATER SUPPLY NEEDS. UNTIL NOW WE HAVE NOT BEEN SUCCESSFUL, BECAUSE WATER SUPPLY IS MORE EASILY TIED TO BENEFICIARIES THAN THOSE PROJECTS WHICH ARE COVERED IN THE WATER RESOURCES ACT. HOWEVER, SINCE THE COST TO OUR CITIZENS FOR WATER, WASTEWATER, GARBAGE, AND OTHER ENVIRONMENTAL NECESSITIES IS GROWING IN LEAPS AND BOUNDS, WE MUST FIND WAYS TO REDUCE THE USER'S COSTS WHILE ASSURING ADEQUATE, AND SAFE AIR AND WATER. IT IS TIME FOR THE FEDERAL GOVERNMENT TO HELP US IN THIS AREA.

EARLIER THIS MONTH NEW YORK STATE'S COMMISSIONER OF ENVIRONMENTAL CONSERVATION, THOMAS C. JORLING, TESTIFIED BEFORE CONGRESS FOR FUNDS TO HELP US DEVELOP WATER CONSERVATION PLANS AND PROGRAMS FOR LOCAL GOVERNMENTS. THIS WAS MOTIVATED BY A DROUGHT EMERGENCY DECLARED BY GOVERNOR CUOMO ON MARCH 16, 1989. WE HAVE A WATER SHORTAGE AND OTHER SERIOUS SUPPLY PROBLEMS THROUGHOUT THE STATE. ON LONG ISLAND, THERE IS A MANDATORY WATER WITHDRAWAL CAP TO PROTECT THE SOLE SOURCE AQUIFER FROM CONTAMINATION. IN THE FINGER LAKES AREA AND IN SOUTHEASTERN NEW YORK THE RESERVOIRS ARE DOWN. IN FACT, THE CITY OF NEW YORK'S RESERVOIRS ARE DOWN 165 BILLION GALLONS OR 30 PERCENTAGE POINTS BELOW FROM WHERE THEY SHOULD BE AT THIS TIME. THE IMPACT OF THIS EXTENDS BEYOND THE NINE MILLION PEOPLE AND INDUSTRIES THAT LIVE AND WORK IN NEW YORK CITY. MANY OTHER COMMUNITIES USE AND DEPEND ON THE WATER THAT THE CITY HAS DEVELOPED. IN FACT, IF THOSE COMMUNITIES WHO USE NEW YORK CITY'S WATER WERE AGGREGATED INTO ONE SYSTEM, IT WOULD BE THE THIRD LARGEST SYSTEM IN THE STATE, FOLLOWING BUFFALO.

BESIDES BEING A REGIONAL SYSTEM, THE NEW YORK CITY SYSTEM IS ALSO AN INTERSTATE WATER SUPPLY. THE PEOPLE AND INDUSTRY IN PHILADELPHIA, PENNSYLVANIA AND CAMDEN, NEW JERSEY DEPEND ON THE RELEASES FROM THE NEW YORK CITY RESERVOIRS TO MAINTAIN SAFE SALINITY LEVELS OF THEIR WATER SUPPLIES. IN A DROUGHT, WITHOUT THE RESERVOIR RELEASES FROM NEW YORK CITY THESE SUPPLIES WOULD BECOME CONTAMINATED. EVEN THE SHELL-FISHING INDUSTRY IN

DELAWARE BAY DEPENDS ON THE RELEASES FROM NEW YORK.

YOU SHOULD KNOW THAT THERE IS INCREASING PRESSURE TO EXPAND THIS REGIONAL CAPACITY MORE. NASSAU COUNTY ON LONG ISLAND MAY NEED NEW YORK CITY WATER. OTHER MUNICIPALITIES IN THE HUDSON BASIN ARE ALSO LOOKING TO THE NEW YORK CITY SYSTEM TO SUPPLY THEM WITH ADDITIONAL WATER.

PART OF THE SOLUTION TO THE PROBLEMS IN EACH PART OF THE STATE IS TO CREATE NEW SOURCE DEVELOPMENT FOR MUNICIPAL AND INDUSTRIAL USES. AS I MENTIONED, THERE ARE A NUMBER OF WATER SYSTEMS THAT NEED ADDITIONAL CAPACITY ASIDE FROM THE CITY OF NEW YORK. OBVIOUSLY, THOSE MUNICIPALITIES WOULD BENEFIT FROM ANY ASSISTANCE THAT COULD BE PROVIDED FOR THIS PURPOSE. THE BILL THAT CONGRESSMAN HOPKINS IN PROPOSING IS A STEP IN THAT DIRECTION.

IF I MAY, THE WATER PROBLEMS FACING NEW YORK STATE ARE NOT SUPPLY PROBLEMS ALONE. THERE ARE TREMENDOUS NEEDS FOR UPGRADING DISTRIBUTION LINES AND PROVIDING WATER TREATMENT FACILITIES. WE, IN NEW YORK BELIEVE THAT THE FEDERAL GOVERNMENT MUST ALSO FINANCIALLY HELP US HERE. CONSEQUENTLY, WE HAVE LOOKED AT OTHER OPTIONS.

ONE OF THESE IS A LOAN PROGRAM THAT COULD BE STRUCTURED LIKE THE CLEAN WATER ACT'S STATE REVOLVING LOAN PROGRAM. NEW YORK STATE HAS DEVELOPED A PROGRAM TO LEVERAGE FEDERAL CAPITALIZATION FUNDS IN THE BOND MARKET TO ALLOW MORE PROJECTS TO BE BUILT AT A QUICKER PACE. FROM THE STATE'S PERSPECTIVE THIS KIND OF REVOLVING LOAN PROGRAM HAS A NUMBER OF ADVANTAGES, PROVIDED OF COURSE THAT THE PROGRAM IS CAPITALIZED ADEQUATELY. I THINK THE PRINCIPAL ATTRIBUTES ARE SIGNIFICANT AND INCLUDE:

1. MAINTENANCE OF LOAN RESPONSIBILITY AND ACCOUNTABILITY LOCALLY FOR THE DELIVERY OF THE SERVICE. FUNDING PRIORITIES WILL BE ESTABLISHED LOCALLY.
2. MARKET ENFORCEMENT OF OPERATIONAL AND MAINTENANCE IMPERATIVES. AS A MEMBER OF THE NEW YORK WATER FINANCE AUTHORITY, I CAN ATTEST TO THE DISCIPLINE THAT THE BOND MARKET

PROVIDES TO LOCAL DECISIONS.

3. PREDICTABLE LEVELS OF FUNDING ONCE THE FUND IS FULLY CAPITALIZED. LOCAL OFFICIALS CAN PLAN FOR SYSTEM IMPROVEMENTS KNOWING WHAT KIND OF FINANCIAL HELP TO EXPECT. CONSISTENT FUNDING ALSO HELPS MAINTAIN A SUFFICIENT LEVEL OF SKILLED CONSTRUCTION WORKERS BECAUSE THE LEVEL OF BUSINESS ACTIVITY IS CONSISTENT AND CONSTANT.

4. PROJECT SCHEDULING SHOULD BE MORE EXPEDITIOUS BECAUSE THE LOAN PROGRAM WILL BE RELIABLE. COSTS WILL BE REDUCED SIMPLY BECAUSE OF THE TIME VALUE OF MONEY. WE SHOULD NOT ENCOURAGE PROJECT DELAY THAT HAVE ECONOMIC BENEFITS BECAUSE OF BUDGETARY SHORTFALLS OF THE MOMENT. WE HAVE TO PROVIDE INCENTIVES TO HELP LOCAL OFFICIALS TO MAKE THOSE DECISIONS ON A TIMELY BASIS. IT WILL SAVE THE TAXPAYERS' MONEY.

5. ONCE ESTABLISHED, SUCH A LOAN FUND WOULD ALLOW THE FEDERAL GOVERNMENT TO CONCENTRATE ITS RESOURCES IN OTHER NECESSARY AREAS SUCH AS RESEARCH AND DEVELOPMENT, ON TECHNOLOGY DEVELOPMENT AND TRANSFER AND STANDARDS AND ENFORCEMENT, AREAS THAT LOCAL AND STATE GOVERNMENTS HAVE A LIMITED CAPABILITY TO PERFORM.

6. CITIES LIKE BUFFALO, NEW YORK AND, FROM WHAT WE'VE HEARD TODAY, LEXINGTON, KENTUCKY WOULD BENEFIT IMMEDIATELY FROM AN INFRASTRUCTURE LOAN PROGRAM LIKE THE ONE I JUST OUTLINED. THE NEEDS IN THE BUFFALO WATER SYSTEM ARE SIGNIFICANT, AS YOU KNOW, MR. CHAIRMAN. THE ABILITY OF THE CITY TO IMMEDIATELY USE THE LOAN FUND TO ATTRACT INDUSTRY WITH THE TREMENDOUS RESOURCE BASE OF THE GREAT LAKES IS IMPORTANT.

WATER SUPPLY IS ONLY ONE OF MYRIAD SERVICES FOR WHICH A LOCAL GOVERNMENT IS RESPONSIBLE. ON THE ENVIRONMENTAL SIDE THEY ARE ALSO

ACCOUNTABLE FOR SEWERAGE AND SOLID WASTE DISPOSAL AND HAZARDOUS WASTE DISPOSAL. LOCAL GOVERNMENT OFFICIALS ARE ALSO RESPONSIBLE FOR THE DELIVERY OF OTHER SERVICES INCLUDING RECREATION, EDUCATION AND TRANSPORTATION. ALL OF THESE THINGS ARE UNDER CONSTANT REGULATORY AND BUDGETARY PRESSURE. THE PEOPLE THAT ARE RESPONSIBLE AND ACCOUNTABLE FOR THE DELIVERY OF THESE SERVICES ARE NOT EXPERTS. THEY DEPEND ON THE STATE AND FEDERAL GOVERNMENTS TO HELP THEM THROUGH THE REGULATORY AND FINANCIAL MIRE. WHILE THE SUBJECT OF TODAY'S HEARING IS WATER SUPPLY, A LOAN PROGRAM WHICH ALLOWS THE ENTIRE GAMUT OF ENVIRONMENTAL INFRASTRUCTURE TO BE CAPITALIZED IN ONE FUND IS ANOTHER IDEA THAT IS ALSO WORTHY OF YOUR CONSIDERATION.

IF YOU HAVE QUESTIONS, I WOULD BE HAPPY TO ANSWER THEM.

Mr. NOWAK. Now I think we will get back to our Federal panel and that will leave us with one other witness from the State of Illinois, Mr. Peter Lamb.

Peter, would you identify yourself? Are you willing to wait a few minutes, or in the alternative, would you like to join this panel and testify along with them? I will leave it up to you. Why don't join in as the fourth witness, and I think we were on our second witness.

Mr. Dickey, you have given your direct testimony. Is that correct?

Mr. DICKEY. That is correct, Mr. Chairman.

Mr. NOWAK. And we will turn to Mr. Dale Duvall, Commissioner of Bureau of Reclamation.

TESTIMONY OF DR. DICKEY, MR. DUVALL, MR. DUNCAN, AND MR. TANKERSLEY—RESUMED

Mr. DUVALL. Thank you, Mr. Chairman. I would like to thank you and your Committee for presenting this hearing and giving us an opportunity to express our views and to have some input into what I think everyone in the Federal panel which unanimously agree is a critically important topic and may get wider before it gets narrower.

I have with me today two technical back up people in the person of Mr. Frank Ellis who is the Chief of our Contracts and Repayments Branch at the Bureau of Reclamation, and Mr. Dick Porter who is in our Resources Management area.

So if we have members who have questions that exceed my technical expertise, we can call on them for some back up.

Congress established the Reclamation program to assist the settlement of the arid American West through agricultural development.

As the population and the economy grew, the original single purpose mandate was expanded to include multi-purpose projects for municipal and industrial supply systems, hydroelectric power, flood control, recreation, environmental enhancement, and salinity control.

With an investment of $9.4 billion concentrated in the most arid environments in this Nation, Reclamation has developed over 300 dams and dikes, 51 hydroelectric power plants, and the associated canals, pipelines, and tunnels.

These annually deliver 10 trillion gallons of water to over 25 million people for agricultural, municipal, and industrial uses.

They produce crops valued in excess of $8 billion each year from almost 10 million acres of farm land. Also, the 51 hydroelectric power plants provide enough electrical energy to meet the residential needs of 15 million people.

Recreation areas annually attract some 75 million visitors and flood control features produce annual benefits of $211 million.

From the outset, the Reclamation Act of 1902 required repayment by project farmers under the original Act in ten annual installments without interest.

Experience, however, revealed that farmers were unable to repay within 10 years, so Congress passed several Acts, particularly the

Fact Finders Act of 1924 and the Omnibus Adjustment Act of 1926 to extend repayment and to provide other relief.

With that basic background on the Bureau's history, I would move on to the conceptual and legal basis for Reclamation's water pricing policy, which is the historical Federal cost of providing and the actual cost of continuing the service.

Clearly it is recognized public policy that cost recovery should not be considered to be a market price. Therefore, we should understand the derivation of the costs of providing service for various function, including irrigation and M&I water service.

It should also be noted that the rights to use of the water stored and delivered by Reclamation projects are obtained pursuant to state laws.

Since most Reclamation projects are multi-purpose, the initial step in determining repayment obligations is to allocate project costs among the objectives or purposes served.

I should distinguish the difference for you between cost allocation and repayment. Cost allocation is the distribution of project costs among the purposes served according to principles of economic efficiency and equity.

The most widely accepted method of cost allocation is the separable costs-remaining benefits method in which multi-purpose project costs are allocated in proportion to benefits accruing from each purpose.

Under this method no purpose is supported by the benefits of another purpose. Each receives its share of advantages resulting from the multi-purpose development plan.

Independent of repayment policy, the ability to repay and preconceived notions of desirable water rates do not influence the allocation.

Once the allocation has been performed, however, cost sharing, up front financing, and repayment laws and policies determine the reimbursable costs for each group of project beneficiaries.

Repayment policy, as opposed to cost allocation, is concerned with the amount and the manner by which costs will be repaid. This involves a broader range of considerations reflecting long standing national goals and objectives, including repayment ability.

It also provides a basis for cost sharing or up front financing by non-Federal interests.

The Reclamation Project Act of 1939 provided for irrigation repayment based on the ability to pay from the increased net income from irrigated farming.

To measure this level of repayment, Reclamation utilizes farm budget analysis. In the planning or construction stage, the inservice date together with a development period, when appropriate, is estimated.

Farm sizes and crop yields are projected to that date. Farm budgets are based on full-time family size units both with and without the project.

Increased labor, management, and capital are deducted from the increased net farm income to determine the repayment capacity.

Contracts for repayment are based on the payment capacity remaining after operation maintenance and replacement costs have been deducted.

It is Reclamation's policy to collect 100 percent of payment capacity after OM&R costs have been deducted. After the first year of full development and production, no adjustment is made for increasing OM&R costs or ability to pay.

For 9(e) water service contracts, the current OM&R costs are reflected as a part of the re-analysis of payment capacity at 5 year intervals.

Under current law and policy, costs allocated to irrigation are repaid without interest usually over a 40 year period.

In most areas, assistance is available from Federal power revenues to repay the costs that are beyond the irrigators' ability to pay.

Such irrigation assistance is typically repaid toward the end of the repayment period without interest. However, it should be noted that under the Reclamation Reform Act of 1982, larger qualified land holdings are required to pay the full cost of water, which includes interest charges.

That covers our policy regarding agricultural pricing and repayment. The basis for the repayment of costs allocated to me M&I function was established in the Reclamation Project Act of 1939 and the Water Supply Act of 1958, which Mr. Dickey referred to earlier.

The 1939 Act provides for repayment with interest over 40 years. While the Water Supply Act of 1958 recognizes the primary responsibilities of the States and local interests in developing water supplies for domestic, municipal, industrial and other purposes, it nevertheless authorizes the Federal Government to participate in developing such supplies in connection with construction, maintenance, and operation of Federal navigation, flood control, irrigation, or multi-purpose projects.

The Water Supply Act permits storage capacity to be included in Reclamation or Corps of Engineers reservoirs for present or anticipated future demand for both municipal or industrial water.

Costs allocated to M&I are fully reimbursable with interest over 50 years. The interest rate for newly authorized projects for the current fiscal year would be 10.25 percent.

Repayment on storage included to meet future demand can be deferred for some years until it is first used. However, repayment is required within the 50 year period. No interest is charged on this block for a period of up to 10 years, or until first used.

In addition to Reclamation Law, Reclamation also operates under a 1984 letter from President Reagan to Senator Laxalt which established a financing and cost sharing policy for water projects.

Under this, Reclamation is seeking out new partnership arrangements with states and other non-Federal interests in financing and cost sharing.

Project beneficiaries, not necessarily Government entities, ultimately bear a substantial part of the cost of project development.

Prior commitments are being considered and are a factor in negotiations leading up to project construction, although consistency in cost sharing for individual project purposes, with attendant equity, is being sought.

In project planning, generally, we are requiring 50 percent cost share with the sponsors. A case by case negotiation process is being

followed which permits voluntary cost sharing to exceed the minimum requirements.

In summary, Reclamation's procedures for establishing rates for water services are derived from several statutes and Administration policies. They are based on recovery of Federal costs and not on a commodity based market price.

Thank you.

Mr. NOWAK. Thank you very much.

We will now hear from Howard Tankersley who is the Director of the Watershed Projects Division.

Mr. TANKERSLEY. Mr. Chairman and Members of the Subcommittee, I am pleased to appear before you to discuss the Department of Agriculture, Soil Conservation Service water resource project activities relating to water supply and the program policies relating to water supply pricing.

The small watershed protection and flood protection program authorized by Public Law 83-566 and administered by USDA Soil Conservation Service has water supply as one of the eligible project purposes.

Since passage of the Act in 1954, we have authorized 1,462 projects in total. As the principal purposes are to provide flood prevention and erosion control, the vast majority of our projects have been for those purposes.

We have, however, in accord with provisions of the law, funded 218 projects which have a water supply component to provide for irrigation, rural water supply, or municipal and industrial water supplies.

Small watershed projects are unique. They are unlike other Federal projects in which the Federal Government funds, owns, and operates a project and sells water to somebody.

Instead, each small watershed project is developed at the request of and in partnership with the local sponsoring organization.

The local sponsoring organization is a unit of state government that owns, operates, and maintains the project after completion.

The local unit of government assumes all costs of this operation. Federal input to the small watershed program is limited to providing the technical assistance necessary to plan and design project features, and to provide construction cost sharing for installation of the approve project features.

The law has set the Federal construction cost sharing at 50 percent for water supply features which are included in approved Public Law 83-566 plans.

An administration restriction denies any Federal cost sharing to provide municipal and industrial water supply. When this feature is present in a project, the entire cost must be paid by the local project sponsor.

SCS does not have a water pricing policy for deciding to include a water supply feature in a Public Law 83-566 project. The water supply feature is included as an alternative in a project when requested by the sponsor, and it is incorporated in the least costly way in conjunction with other flood retarding and erosion control works.

The sponsor then makes the judgment to retain the water supply feature knowing that they must pay at least 50 percent and sometimes all of the construction costs of the water supply.

Pricing of the water is controlled by the project sponsor and is set at a rate to recoup local capital costs and expected operation and maintenance costs.

I would be pleased to answer any questions.

Mr. NOWAK. Thank you very much.

We will go now to the testimony from Dr. Peter Lamb who is the Principal Scientist and Section Head of the Climate and Meteorological, Chief Editor of American Meteorological Society Journal of Climate.

Dr. Lamb.

TESTIMONY OF PETER J. LAMB, HEAD, CLIMATE AND METEOROLOGY SECTION, ILLINOIS STATE WATER SURVEY AND PROFESSOR, DEPARTMENTS OF ATMOSPHERIC SCIENCES AND GEOGRAPHY, THE UNIVERSITY OF ILLINOIS

Dr. LAMB. Thank you, Mr. Chairman.

I too am pleased to have the opportunity to appear before you today. The perspectives that I represent are twofold.

Firstly, my organization, the Illinois State Water Survey has for many years been interested in the topics of climate fluctuations, water resources and their interrelationships.

Secondly, about 3 years ago, we established with Congressional funding the Midwestern Climate Center, which now serves eight other Midwestern States, in addition to Illinois.

What I would like to do is briefly summarize the key points of my written testimony, and there are four that I would like to make.

Firstly, that the climate of the Midwest, like other areas of the this Nation and the world, has varied very substantially during the last 10 to 12 years, and much more so than during the 20 plus year period that began in about the mid 1950's.

In the Midwest we have had almost everything you can get weather wise in the last 10 to 12 years. We have had three summers that have been dominated by heat wave and drought conditions. We have had three back-to-back very severe winters in the late 1970's. One of those winters in particular, and a later one in the early 1980's, had very excessive snowfall.

These climatic extremes have severely impacted many economic activities—agriculture, water resources, transportation, and the energy industry.

And I think it would be wise for managers to plan for a continuation of this situation of rather extreme weather and climate fluctuations.

My second point is an elaboration on one that has been made already this morning, and that is that the 1988 drought is not finished and we in fact have a 1988-89 drought in the Midwest and this is really quite illustrative of the character that a severe climate fluctuation can have.

A particularly unique aspect of 1988 was the very severe dryness early in the year—in the first six months of the year. And in fact,

the months of April, May and June in the nine state area in the Midwest were the driest for which we have records, and the records go back to prior to 1900.

For that area in that 3 month period as a whole the precipitation was a little bit under 50 percent of the long term average.

For the month of June it was only 28 percent of the long term average. There was mild recovery in July, August, and September last year when the rainfall approached the long term normal, but did not get much beyond it.

But every month since then, with the exception of November, 1988, has seen deficient rainfall, rainfall below the long term average for the particular calendar month concerned.

And in fact, the January through April 1989 period has been marginally drier in the nine states in the Midwest than were the months of January through April 1988.

My third point is that a climate fluctuation like this can have profound effects on the water resources of the region, and I would like to illustrate that by reference to the State of Illinois. I do that because the data for Illinois were most readily accessible to me, but I believe that the results are representative of wider area of the Midwest.

The severe April through June 1988 precipitation deficiency was accompanied by a very rapid depletion of soil moisture. And this has not been fully recharged during the past winter. Winter is normally the time when soil moisture recharges because there is little or no atmospheric demand for that moisture. So most of the precipitation comes to reside in the soil.

And in fact, from a soil moisture standpoint, in the Northern two-thirds of Illinois, and I suspect in much of Iowa, we are in a worse situation today than we were the same day last year.

In 1988 the precipitation deficiency in the early part of the year and the accompanying soil moisture deficiency contributed to a very substantial draw down of rivers, lakes and streams, often to the lowest values for several decades.

By late summer, this had imperiled the water supplies of several major Illinois cities such as Bloomington, Decatur, and Springfield. And serious low flows and levels have persisted to this day, particularly in the areas where winter precipitation was least abundant—in West Central and Northwestern Illinois, and again, I would suspect in much of Iowa.

The foregoing situation was accompanied by a precipitous decline in the shallow ground water levels around the State of Illinois. The last page of my testimony has a graph which illustrates this.

By August 1988, three-quarters of the wells that we use for monitoring shallow ground water had reached their lowest level for that calendar month ever in the periods for which we have records. And as the graph that I just mentioned shows, there has been very little recovery since.

As we heard this morning, ground water is a very important source of water in rural areas. And more than 90 percent of the rural water supply throughout Illinois comes from shallow ground water.

I think it is important, too, to realize that the recovery from the situation that I have outlined will take substantial time and will

occur stage by stage. Normally soil moisture would be replenished first, but in the coming 6 months that is going to be delayed because of the extensive soil water demand of Midwestern crops.

Once soil moisture is recharged, then the base flow to rivers, streams and lakes is enhanced and that can contribute to a sustained elevation of those water bodies, whereas what we have had in the past year has tended to be sporadic increases in the flow rates and the levels, and they have tended to go back to where they were after the isolated precipitation event.

The last part of the hydrological cycle, to be recharged will be the shallow ground water. If you look at the graph accompanying my written testimony, you will see that we are in a very low situation and it will likely take at least the rest of this year to improve that.

My fourth point is that the situation that I have outlined has some distinct policy implications. I think there is clearly a need for continuing efforts to improve water catchment, conservation, storage and delivery, and at the same time, to preserve or enhance water quality.

There is an according need for the Federal Government policy to be sufficiently flexible to support these necessary developments.

And finally, I think it is quite clear that water will become an increasingly precious commodity even in the parts of the United States which we have typically assumed to be areas of water abundance.

Thank you, Mr. Chairman.

Mr. NOWAK. Thank you all very much.

Let me just ask a couple of questions of you before I turn to Mr. Stangeland.

Mr. Duvall, you talked about in your testimony you talked about the non-Federal share of dollars to agricultural water supply and municipal and industrial water supply.

I wonder if you could tell me what—is there an average that you could determine from all of your experiences with your reservoirs?

Mr. DUVALL. I suppose, Mr. Chairman, you could calculate an average, but a key ingredient of the letter from President Reagan to Senator Laxalt was case-by-case, and so no two circumstances have ever been exactly comparable to a prior one.

We have some instances, the Buffalo Bill Dam development in Wyoming where the cost sharing paid up front by the State of Wyoming has been 50 percent or more.

Generally, in opening discussion with a new prospective water project sponsor we try to start at the 35 percent up-front participation level, and sometimes in the process of negotiating a project we wind up with something that might be a mixture between the 35 percent up-front and some kind of enhancement to the total repayment that will be received by the Treasury from the entire project.

Mr. NOWAK. Are you in the process of building any new dams or replacement of old dams at the present time in your system?

Mr. DUVALL. We are still in the process of completing several billions dollars worth of construction backlog, but the last really major project authorization we have where we are already out on the ground doing construction work was back in the late 1960's, I believe, when the Colorado River Supply Project was approved.

Last year the Animas-LaPlata Project in the Four Corners area was authorized, but we are not to the point where we are breaking ground on that one yet.

Most of the major new facilities, new storage projects, new dams that we foresee in the future are a long ways down the pike. The reason for that is primarily based upon the fact that, through water conservation measures and through cooperation with the tweaking of state water rights laws, we see an abundance of opportunity to generate increasingly needed water in most of our larger municipal areas from within the infrastructure that is already there.

There is a lot of opportunity there and the increasing cost for water to agricultural users causes them to use less. So we are working on mechanisms to capture that same water and convert it to municipal purposes.

Mr. NOWAK. Let me ask you, what do you do with the—you have got older contracts that are expiring or fulfilling. they were 40 year contracts perhaps to an agricultural business or a set of agricultural businesses out the same date of operation back then, as they come—and I assume some of them will be expiring within the next 5 years or so, 10 years, do you re-negotiate those contracts?

Mr. DUVALL. Well, let me expand just a little bit on your question so that I do not mislead the Committee in any way.

We have two basic types of contract. One is a repayment contract, a 9(e) contract, under the 1939 Act. In a 9(e) situation, which is what we have everywhere in the West principally, with the exception of the Central Valley Project in California, a repayment contract is where we go out and find a project sponsor and they become our partner and we build a project. They enter into a repayment contract that is like the purchase of your home. You sign a contract when you buy it, and that contract is good until it is paid off, and then you enjoy the benefits of the project after you have fulfilled the repayment obligation. Those contracts do not expire.

In California, because the contract was integrated with so many dams and so many conveyance facilities, and in fact, even integrated with the State Water Project as it developed, there was no point in time where you could say this is the ultimate development cost of this project.

So we entered into contracts that were water service contracts, more along the principle of a utility based organization. Those contracts historically were entered into for a 40 year period.

Some of those are commencing to expire now. The first one came up in February of this year, and is being renewed for an additional 40 years. Environmental assessment studies will be done, and a significantly higher water marketing price will be associated with the contract.

Mr. NOWAK. Well, as those contracts are renewed, I am wondering the cost that could be increased. You said the first group, 9(e), would be treated as a mortgage on a home, would be paid off and they would receive that water regardless of how their circumstances have changed and they perhaps now have the ability to pay.

I am having a hard time rationalizing that with the problem that was brought to us, as you heard this morning, by the three members from Kentucky looking at their particular struggle to produce drinking water and saying the agricultural community is being subsidized because they are working on or have worked on the ability to pay, and even if there is a contract expiration and the contract started off because the person had no ability to pay and now is a very successful farmer in one of the 17 Western States and has 959 acres and four family members have 959 acres.

How are we rationalizing this policy? I know the Bureau and the Engineers of the Army are not under your jurisdiction, but I wonder, you know, where the subsidization—first of all, could you give us a total number, and does your Bureau have any total numbers on what that subsidy and agriculture in the agricultural area would be?

And secondly, don't you think that we have reached a time of development in agricultural acres where we have ample testimony that there is a surplus of agricultural land available in this country today, in fact we pay as a Government I believe certain farmers in certain areas to not grow certain crops.

But I am thinking if this subsidy is institutionalized or permanent out there, then perhaps in this day and age we should look at some help for those that are in the situation where the three members from Kentucky—that they testified about this morning.

Anybody could answer that if you have any comment on that.

Mr. DUVALL. Let me start out and then I will invite comments from others as well.

First of all, there is no question that there is a subsidy that is extended to the agricultural community. The Bureau of Reclamation's program from its infancy was designed so repayment from agricultural users would not include interest on the invested capital, even though they were expected to repay the principle costs.

So there is an agricultural subsidy associated with the irrigation and water deliveries. That subsidy, however, is not a permanent subsidy because it extends until such time as the tax payer's investment in infrastructure is repaid.

Many of our projects are repaid and more are approaching repayment at this point in time. And that makes the distinction that the Federal subsidy really is incurred at the point in time when the project is built. There is an appropriation and the money is paid out. Then the repayment obligation is paid back without interest, that has been historically the way the subsidy has been measured.

However, a significant number of our projects are either paid off now or are approaching repayment. The one exception is the Central Valley Project where we continued to add more features to it all the time. The new water marketing policy that associates with these new contracts calls for a rate which is adjustable periodically. That rate will ensure that the Federal investment in the Central Valley Project in California will be fully repaid by the year 2030.

So the question of sustaining a perpetual subsidy has been cut off with, I believe, the Coordinating Operating Agreement, which Congress passed year before last.

So the subsidy is not a perpetual one. It is a significant one. My reaction as a certified public accountant, when people ask me how

large is that subsidy I tend to think it should never be calculated to be a larger subsidy than the number of dollars the American public puts out.

The benefits to the economy or to the Nation which extend to all of our citizens, go on for a much longer period of time. There are longer benefits, but the subsidy, I would suggest to you, is the amount of tax payer dollars which go out and never come back, and in this instance not only do they come back, they come back a long time in the future, which means they are not a present value dollar when they are repaid. That is where we should be measuring the subsidy. And I could not tell you what that number is precisely.

Anyone else?

Mr. DICKEY. Mr. Chairman, if I might just make a couple of observations on the question. We do have a difference in cost sharing policy for agricultural water supply and municipal/industrial water supply. As the Commissioner has indicated, the Reclamation program has a long history of the development of the West and development of arid areas, and that the cost sharing formulas that now exist for the Corps program, as far as agricultural water supply go, really have little meaning in the sense, as my testimony indicated, that there is no agricultural water supply provided by the Corps of Engineers outside the 17 Western States.

So the 35 percent formula that is found in Public Law 99-662, was an attempt, frankly, to move from a perceived very deep subsidy to a lesser subsidy, and that was true of flood control and it was true of agricultural water supply.

Frankly, the 35 percent came from an argument within the Administration that agricultural water supply and rural flood control should be comparable. The Administration at one time proposed a bill that made both flood control and agricultural water supply 35 percent, but, of course, ultimately flood control turned out to have a different formula, but that is where the 35 percent came from in the 1986 Act. But it is important to recognize that for all practical purposes that number is an empty box in the sense that that is a subsidy that is available in principle, but in fact there are no projects being pursued under it. So one, as I said, can make the theoretical argument, that there is not a comparability here. Both are vendible services could be argued and so forth. But in terms of looking at those differences, one has to ask what, in fact, is going on in terms of real Federal expenditures under those formulas.

I have worked for the Department of the Army since 1973, and I do not ever recall there being an agricultural water supply project being proposed. I am not aware of any studies that are going on where agricultural water supply is a significant benefit category. So it is just something that is out there that really has little practical application.

Mr. DUVALL. I think that is true. Generally, we are not studying bringing new irrigation acreage under development. There are places where, because of problems with ground water supplies, with subsidence and that sort of thing, we are looking at projects that may correct hazards that are occurring because of existing irrigation practices. There basically is not any profit/benefit in new irrigation acreage in today's economy.

Mr. NOWAK. Mr. Dickey, let me go back and ask you a question which was very evident this morning. What additional cost would you or could you incur with the ability of that community to tap into an existing reservoir?

Is there any down side that the Corps can perceive or any additional costs that you have not already, first of all spent in building the project or recovered through the user of that project?

Mr. DICKEY. I think, Mr. Chairman, one has to recognize—and I think it was implicit in the remarks this morning—that in some cases there may be some specific costs associated with tapping into a water supply provided by a reservoir. I think there was certainly no question, at least as I heard it this morning, that those would be a cost to the non-Federal user of the M&I water supply which would have to be picked up.

The argument is really about what should users pay for the benefits provided by the Federal facility recognizing that those projects are already built, that the funding resources were expended historically, so there is no additional out-of-pocket costs to the Federal Government in letting someone use a project. That in one sense is true, but in another sense I think one has to recognize that the costs are not always reflected in expenditures,

Certainly from the Federal Government's perspective, there are two kinds of costs we need to be concerned about. One is that whenever you change the operation of a reservoir—for example, if you convert storage space in a reservoir from flood control to water supply, there is something given up, in this example there is some flood damage reduction benefit that is lost.

Now when you are talking about very small changes in storage, it is difficult to quantify, but nevertheless there is some loss there because what you are doing is taking space in a reservoir which would have served the flood control purpose. The space would have been empty, however, now you are going to keep water in there until it is needed for the municipal and industrial supply purpose. So you are taking that space which could be used to store flood waters and making it unavailable for that purpose.

When you talk about small changes it is very difficult to quantify, but nevertheless, there can be small losses and I think we need to be concerned about those, and in fact, often the perception of loss becomes a point of contention as downstream flood control interests become concerned that there be induced damages as a result of reallocation. That is certainly one thing that is important to consider in assessing a charge for people who have us reallocate the storage.

The other thing that has to be of concern is that these projects represent an expenditure by the Federal Government and that means the Federal tax payers historically have expended their resources to build these structures. So there is a question of equity, to what extent the tax payers who historically built these structures are entitled to some replacement. Our pricing policy is intended to keep the tax payers whole, if you will, in terms of turning back to the Federal Government the resources which were historically expended in the context of building that particular project.

Mr. NOWAK. Mr. Dickey, when you mentioned the benefits and the changes in those benefits in this particular instance I can see

where that—if you had multi-purpose dam and you changed the allocations of water to hydro or to irrigation.

When you have a flood control it is a little harder, I agree with you, to quantify any loss, but I would think that the loss would be minimal and on the other side of a draw down, if you are holding so much water in a reservoir and you start to have—after all, your main purpose there is flood control.

If you start to have a hundred year storm or flood come into the system, wouldn't the draw down of that water over a period of time even enhance your ability to hold water into a reservoir system to get better balance throughout the system?

Mr. DICKEY. Mr. Chairman, I think you could never argue that keeping water in a reservoir any longer than necessary would ever enhance the flood control benefits provided by the project. There is a fundamental conflict between the use of a reservoir for storing water, whether it be water supply, recreation, or hydro power where you essentially keep the water in the reservoir, as opposed to using that storage space for flood control. For flood control you want the reservoir to be empty. You want it ready to receive the flood waters. And to the extent that it is not, you are sacrificing some benefit.

Mr. NOWAK. Well, in these circumstances wouldn't that use of the water—to me it is a much higher use than anything else, perhaps other than hydro, if you were going to quantify that benefit to an area to have a reasonably priced water supply that is not contaminated.

You know we have received some testimony that two areas—three areas really have got additional chemicals in the ground water that are getting through the system and into the stomachs of a lot of kids. Someday somebody is going to have a problem with that and the testing will reach a limit, especially if you have a drought and you start to draw down in that aquifer, you know you are getting more and more of a higher concentration chemicals.

I mean how do we balance this off and say, well, you know, even though we have to change the original purposes of the reservoir or the water storage, you know, we have got to look at the other sides of these questions and maybe there is a higher purpose and the Corps should look at these with that flexibility in mind.

Mr. DICKEY. I could not agree more, Mr. Chairman. In fact, we are, as I indicated in the testimony, open to reallocation to storage, that we recognize that there is evolution and economic activity. There is evolution in the values afforded by different uses of the storage. So we are certainly open to reviewing how our reservoirs are operated and in fact, we do make reallocations of storage.

The question becomes what is the proper payment to be made when in fact it makes economic sense? We would all agree that we would not want to reallocate from a higher purpose to a lower purpose. Let's take for granted the assumptions that were stated here that in fact use of the reservoir for municipal and industrial water supply represents a much more valuable use of that storage.

It goes without saying, because the use is more valuable that there should be indeed a willingness and ability to pay for that. And in fact, if you look at the actual cost of reallocated storage as

provided in for our reservoirs they are really very, very low and in fact represent a very small share of the total cost of the water.

As you well know that to deliver water consists of not only having the storage space, but you need the distribution system, you need the treatment system, you need conveyance facilities and so forth. The cost of the storage space itself in the projects that we looked at in preparation for this hearing in no case exceeded 10 percent of the total cost of even the wholesale price of the water. So the notion that somehow the price is excessive for the storage itself is frankly hard to understand because the storage represents only a small fraction of the total cost of the delivery of water itself.

I think we are talking about literally 6 or 7 cents per thousand gallons of water. These are very low prices and it is true in certain areas where you have difficult terrain and so forth you may have very expensive distribution systems or conveyance facilities, but that is an issue that is separate from the cost of the storage space itself. And, again, in looking at the policies that we follow here, the updated cost of storage and in fact the cost of the storage is really very small.

Mr. NOWAK. Mr. Dickey, are you familiar with the particular situation in Kentucky? Have you had some review of that?

Mr. DICKEY. Mr. Chairman, we have information of our own only in the case of one of the projects which was eluded to in the testimony there. And according to preliminary calculations that we have, the cost per a thousand gallons is about two and a half cents.

Mr. NOWAK. Well, we are going to keep the record open. I hope in the next few weeks you can provide it for the record.

Mr. DICKEY. We will provide that for the record.

[The information follows:]

GRAYSON LAKE

Our most recent estimate of the price to which would be charged to utilize Grayson Lake for 2 MGD water supply is $753,000. This is based on the updated cost of storage. We could finance this over a 30 year period at 9¼%. The annual cost would be $79,800 which amounts to about $0.11 per 1,000 gallons. While we do not know the total cost of the system the city of Grayson proposes to develop, this storage cost is not expected to be a major component of the overall plan.

DEWEY LAKE

The only formal request on record for water supply from Dewey Lake has been from the Auxier Water Company in 1983. The request was for 0.2 MGD. They were informed at that time the cost of 0.2 MGD would be about $66,000 with an annual of $6,650. This amounts to about $0.09 per 1,000 gallons. Preliminary analysis indicates that a maximum of 1.5 MGD could be reallocated to water supply in Dewey Lake without severely affecting the authorized project purposes. Based on current prices and policies, the cost of 1.5 MGD would be $568,600 with an annual cost of $58,900. This amounts to approximately $0.11 per 1,000 gallons.

CARR FORK RESERVOIR

To date the Corps has not received a formal request for storage in Carr Fork Reservoir. However, representatives from our Louisville District office attended a meeting with local officials in December 1987 to discuss the possibility of using the project for water supply. Carr Fork is a relatively small lake and no determination of its availability for water supply or an appropriate price has been made.

Mr. NOWAK. Another thing that struck me as I mention this, what if they went downstream from the reservoir and physically they could get into an area and pull some of that water that is

downstream at the reservoir or upstream instead of letting it get into your reservoir? What would you charge them for that?

Mr. DICKEY. Well, we do not charge for that. We have no control of that. And indeed, remember that the only price that we are charging is for the use of our storage space. That it is in every case the responsibility of the user of our water supply space there to acquire the water rights that go with the right to use the water. That user has to, depending on the state, of course, acquire the water rights that are associated with that water for him to be able to use it.

Mr. NOWAK. I know you could not charge. I was just wondering. You do know why they did not look at those drawing water either up or downstream?

Mr. DICKEY. Well, the testimony indicated that they had been doing that, but their growth of demand has been so great that they have exhausted that source. So they need essentially stored water. In a drought, in other words, the flow in the stream is so low that there is not enough there to satisfy their demands. So they need to go to a reservoir.

Mr. NOWAK. Well, thank you very much. Let me turn to Mr. Stangeland for questions he may have.

Mr. STANGELAND. Thank you, Mr. Chairman.

And I want to thank the panel very much for being willing to wait this long and give us the benefit of your knowledge and expertise.

I am going to walk you through a few things here and see if I can get some things straight in my mind. I lost my place where I want to—okay.

Off the record. [Laughter.]

Can you give me your assessment for the benefit of this Committee as we look to try to write policy what you think of say the Hopkins approach in general?

Mr. DICKEY. Well, I guess—speaking from my perspective as an economist who has worked on this area, I would observe that first of all the proposal is certainly contrary to the long term trend that we see in the evolution of water policy. For municipal and industrial water supply, for hydroelectric, for all vendible services provided by water projects the notion has been to move toward the elimination of Federal subsidies.

And indeed, if you go to the economic literature the theme is that even pricing policies that are oriented towards full cost recovery are not sufficient because they do not properly promote conservation.

It is interesting in our hearing before the Appropriations Committee this year in the House of Representatives the questions came up about conservation pricing, which, frankly, go well beyond the notion of simply recovering Government investments.

And so I frankly see in the approach that is suggested here a return that really goes way back beyond even the whole history of water supply in the Federal Government going back to even some of the earlier laws before the 1958 Act. Historically there has always, at least nominally, been a requirement of 100 percent recovery at least in the context of the Corps of Engineers program and that water supply was a state and local responsibility. To the

extent that the Corps of Engineers was involved in it, it was to be a part of a multiple purpose reservoir because you did not want to misuse a reservoir site. You wanted to make sure it was used in the best way, but there was not to be a subsidy there.

Mr. STANGELAND. Mr. Tankersley or Mr. Duvall?

Mr. TANKERSLEY. You know Mr. Hopkins' question is a very entertaining one and it is a good one. If you look at classical economic theory, then the classic theory of the lighthouse is essentially what justifies the Federal Government's investment in flood protection as opposed to its investment in M&I water supply.

You do not have in the case of the lighthouse a commodity that can be equally bought or not bought by those people who choose or choose not to use it. Like flood protection, it is not something that you can buy so much of and forego the rest, whereas M&I water supply or any water supply for that matter, is priceable on a per-unit basis. You can buy however much of it you want.

Mr. STANGELAND. Do you have any comment Mr. Duvall?

Mr. DUVALL. Well, I think a couple of points perhaps should be made by the Federal panel that have not been made yet. I do not think there is any question amongst any of the panelists here that, in all likelihood, the condition the people in Kentucky referred to today are in fact suffering from is a low-grade ground water supply. They do not have stored water, which would allow them to avoid taking low-grade surface waters, direct diversions, from streams during low flow periods.

That is undoubtedly true there. I know it to be true in rather large areas in other places throughout our service area. There are lots of places in America where the economic stability is seriously disrupted or impaired because they do not have access to an adequate and sufficient quality of water.

Most places have water, but lots of places do not have the quality of water that is healthful for human consumption.

So it is not that we are singling out one section of the nation or another. There are lots of places where there are ground water problems. The Corps of Engineers, Bureau of Reclamation, the Department of Agriculture are working on rural water supplies. We are working with Governors and state engineers on ways to assure an adequate and a better quality supply of water to those kinds of areas.

We are not in a position here as representatives of the Administration to suggest that we should go to a new subsidy in that kind of a program. There is——

Mr. STANGELAND. That is why I asked you the question off the record. I——

[Laughter.]

Mr. DUVALL. If we open the gate on these three, I can assure you that in North Dakota and South Dakota and New Mexico and Colorado I can take you out and give you a drink of water from a whole lot of wells so you will understand why people bring their domestic water supply from jugs in town. It is a serious problem. There are some states and some areas where, if each little community went in and put in their own water treatment facility or tried to do just a community water treatment system, it really would not be cost beneficial.

There are some places where, in my judgment, the Federal Government should be looking at a regional and perhaps even a multistate development system. Whether that should be subsidized or whether it should be developed with local bonds or with state guaranteed bonds or something, that is the sort of thing that we generally are talking to governors about. Let us try to find a way we can do this within present law and present Administration policy.

Mr. STANGELAND. Okay. I will not ask you the question on the record. [Laughter.]

Mr. Tankersley, can you explain—describe for me a little bit so I have a clear understanding of what farmer's homes role is in developing a rural water system?

We have got a rural water system that I am aware of, at least one in Southwest Minnesota, one in Central East North Dakota in Hillsboro, one in my district in Marshall and Kitzen County. And can you tell me what the farmers home participation is there? What percent of the total cost of those would come in grants? And what percent of the costs of those would be recovered by the Federal Government?

Mr. TANKERSLEY. I do not have that information.

Mr. STANGELAND. Can you provide that for the record?

Mr. TANKERSLEY. We can certainly provide it for the record.

Mr. STANGELAND. Are you aware is there a grant—there is a grant program to help these rural water districts, is it not?

Mr. TANKERSLEY. There is a grant loan program through Farmers Home Administration.

Mr. STANGELAND. Yes.

Mr. TANKERSLEY. Some portion of it, and I think this is negotiated on a project by project basis, would be a grant. Some portion of it would be a loan. Which portions would be which and what the interest rates would be is somewhat determined by the policy that they will provide water out the end of the line at whatever the quote "market area price" for water is. You just about have to look into each project.

Mr. STANGELAND. But there is a current Federal program of subsidizing potable water to those areas that do not have potable water. I guess that is the point I wanted to make.

Mr. TANKERSLEY. Yes, there is.

Mr. STANGELAND. We will find out what the level of that subsidy is at a later time.

Mr. DUVALL. I think I might add one point to that. There is a cap on the size of a project they can do under that Federal program.

Mr. STANGELAND. Yes.

Mr. DUVALL. And so it does not really answer the program when you get large sections of a state that cannot develop its water. It gets——

Mr. STANGELAND. I understand. I understand that, but what I am leading you gentlemen up to is a policy question. Okay.

Now, Mr. Dickey, are you familiar, is Dewey Reservoir, Grayson Reservoir, and Carrs Fork Reservoir are those draw down reservoirs for flood control, and do they get drawn down—do you draw them down to empty to accommodate flood waters?

Mr. DICKEY. I would believe that all of those are flood control reservoirs. Typically in the East reservoirs are not emptied. There are some dry reservoirs in the West, but——

Mr. STANGELAND. So you will always have some water in the Eastern reservoirs?

Mr. DICKEY. Yes, because typically there is a multiple purpose aspect to it, maybe instream water quality or recreation or——

Mr. STANGELAND. So with municipal/industrial usage being drawn off those reservoirs, your draw down requirement would be substantially less and still allow you flood control room in that reservoir?

Mr. DICKEY. Well, again, if in fact you are going to use water that is stored in the reservoir for municipal/industrial water supply purposes, then it means you are foregoing another purpose.

Mr. STANGELAND. Well, but you are going around my question. You are telling me first that you do not draw all the water out. Okay. So that you have got water in there so the reservoir is not dry. That means that there is water there that could be used, and if there were water being drawn off, you probably would not have to draw down quite as much for flood control and I can realize that there has got to be a safety factor in here, but I know that Kentucky Lake is a flood control project and yet it is never drawn down. It is a great bass fishing and fishing area. Toledo Bin in Texas, Santee Cooper, they are all flood control recreational reservoirs that are never drawn down. There is always water there and there is enough water left in them for municipal and industrial usage, and maybe some of those are being used for municipal/industrial, I do not know, but I guess the question, is these are not dry dams you are talking about in the East in Kentucky?

Mr. DICKEY. That is right, Mr. Stangeland.

Mr. STANGELAND. Okay.

Mr. DICKEY. But on the other hand, you have to be a little careful. Remember everybody likes the reservoir in normal circumstances, but as we are well aware of now in the Southeast as a result of last years drought, tremendous conflicts between the recreationists and the hydropower interests and the water supply people over the use of the reservoirs can result.

So when there is lots of rain, it is fine, but it is in the unusual situation, drought, where you get the conflicts in which we have to be sensitive to in making these allocation decisions.

Mr. STANGELAND. Okay. On the irrigation of reservoirs that you have in the 17 Western States, you the Corps, the cost of your project are recovered by the Secretary of Interior in accordance with Reclamation law. Can you define for me what percent of the costs are recovered and what manner are they recovered, over what period of time? Is that very similar to what Mr. Duvall explained to us?

Mr. DICKEY. It is precisely, sir, and supposedly the responsibility of the Secretary of Interior. We just tell them what the allocated cost is and they apply their policy.

Mr. STANGELAND. And so the upfront subsidization of irrigation water is that period of time before you start to receive income for the water that is being drawn off irrigation purposes and eventual-

ly you will receive enough money from irrigation water to completely cost out the cost of that project. Okay.

Now law becomes policy, does it not?

Mr. DUVALL. It tends to.

Mr. STANGELAND. Yes. And whether the law is used or not is still policy, is it not?

Mr. DUVALL. Whether it is used or not?

Mr. STANGELAND. Whether it is used or not, it is still policy. Once something is written in the law it is policy whether it is utilized or not.

Mr. DUVALL. I am not sure where you are leading us. [Laughter.]

It seems to me that Congress has the ability to put laws on the book and then has the ability to take the money away or fail to appropriate money to carry out the law, and it may be still a law, but the ability to implement the law may be impaired by lack of funding.

Mr. STANGELAND. But it is the policy——

Mr. DUVALL. You could change policy by stopping the appropriation of money to a function and consequently the function would go away, but the law would still be there.

Mr. STANGELAND. Well, we will not debate that question. And the reason I asked this is that you apparently are not in disagreement, or at least not officially, with the Water Resources Act of 1986 that talks about requiring a non-Federal sponsor to assume 35 percent of projects costs allocated agricultural water supply, or an amount based on the ability to pay.

Now whether that is used or not, Mr. Dickey, I presume that is policy. And the fact that it has not been used in no way reflects that we have not appropriated money for it, there has just been no request to have done this.

Now agricultural water is a vendible commodity. So now we have got a vendible commodity that says that those people who want to use this will only pay 35 percent of the cost, which is in effect what Mr. Hopkins is asking for water supply. That is where I am leading you gentlemen.

I am not sure that in all cases we can get to a total—getting away totally from some subsidization of various programs.

You know I look at Mr. Perkins' problem. I do not know if you gentlemen can devise a scheme whereby we can help him with a water supply project that eventually will be fully repaid as an irrigation project is for potable water supply. I do not know. Maybe you can. That is what I think you gentlemen ought to be looking at.

Is there a way we can devise a method that they can have water? Apparently they cannot tap into the ground to get decent water. Apparently they have a problem there maybe with their pollution control agency and the kind of septic systems they are running if they have got chloroform in their drinking water, where that chloroform is coming from somebody ought to be attending to that so that their ground water is cleaner.

But in cases like that and when we wrote the Water Resources Bill we put a caveat in there that if a community was so poor in an area of a flood control project that they could not meet the test of

the local cost share that there could be a waiver or difference made to them.

You know we ought to be looking at that for water. I do not know that we have got to provide water supplies to everyone. And as I heard and I have sympathy for the gentleman from New York, when we get into this question we can open a real can of worms. We can have a full blown horrendous new project out here, but I think potable water and good drinking water for people, if they cannot provide it themselves and if they do not have the money to do it with, that we have a business to see if we cannot do something for them.

And yet, I am not one who wants to give away the store. I guess I am as conservative fiscally as anyone, but there are problems and I wonder how we meet them.

As I look at Mr. Perkins talking about a $7 million or $8 million dollar up front cost to tap in on one of those reservoirs, that sounds to me like more than 4 cents a thousand gallons or whatever you quoted, Mr. Dickey. It sounds substantially more. And so that is where I think you people have to give us a little guidance.

Frankly, I think and I thought in the last session of Congress that we have an appropriate role to play to a certain extent in drinking water supplies. How great that role is, I really do not know. I do not want it to be horrendous, but we are already in it in rural water systems.

I do not know what the degree, but we are in it. And if we are in it to rural water systems in my area of the country, we probably ought to be in it in water systems in Kentucky.

And I can sympathize, Mr. Dickey, I know that you have to allow for that high flood stage. We just had flood in the Red River and we were strapped up then with floods there and they are worse down there in Kentucky.

But I think you people ought to help us devise some policy, and I think we have written a certain amount of policy in other areas and I think potable drinking water is—and I am a farmer, is every bit as important or maybe more important than agricultural water.

Frankly, Mr. Chairman, I think it is even more important than hydrowater. So that is kind of my charge to you. I have a whole host of questions, as well, Mr. Chairman, but in the essence of time, and I think it will serve the purpose of this Committee just as well, I will submit them in writing and thank this panel for their testimony and their patience with me, but I just challenge you to give us a hand.

And you do not have to commit the Administration to anything, just help us out.

Thank you.

Mr. NOWAK. Thank you very much for all those off the record comments. [Laughter.]

Let us turn to Congressman Hastert for any questions. The bells have been there. So we will only have enough for 5 or 6 minutes, but we certainly want to give him an opportunity because of the interest he has shown.

Mr. HASTERT. Thank you, Mr. Chairman.

Mr. Lamb, your testimony, I did not hear it verbally, but I have just read it. It talks about the Midwest's lack of water or the drought, if you will, the last couple of years.

It does not look like that is going to be relieved, does it?

Mr. LAMB. No, not in the near term. I think it is going to take many months to recharge soil moisture, longer to raise certain rivers and streams, and even longer than that to raise shallow ground water back to where it was.

Mr. HASTERT. As a matter of fact, I live along the Fox River and Fox Valley in Illinois and that river is usually waist high at this time of year. I could walk across it last weekend without getting my ankles wet. That does not bode well for either what the equivalent is in ground water or soil moisture or anything along that area, does it?

Mr. LAMB. It bodes worse for ground water.

Mr. HASTERT. Tell me what happens then, how about shallow aquifers. What is going to happen with the shallow aquifers in those areas? Are we going to see more and more farm wells and shallow aquifers that are down 100 and 150 feet dry up too?

Mr. LAMB. Yes, I would imagine so and I think this started last summer.

Mr. HASTERT. And what we have left then in Illinois are the deep aquifers that probably will not dry up. Is that correct?

Mr. LAMB. I think if the current precipitation deficiency continued for 2 or 3 years, then the deep aquifers that supply the major cities in the Midwest would start to be affected.

Mr. HASTERT. You are familiar with our situation in Illinois, I am sure, that many of the deep aquifers, especially in my area, contain large amounts of naturally occurring radium. We are using the shallow aquifers as blending pools, if you will, to try to comply with EPA standards so that we can deliver potable water to rural communities and bigger communities in Illinois. Are you familiar with that?

Mr. LAMB. Just a little.

Mr. HASTERT. Well, I am very familiar with it. So things—in prognosis—could become very severe, especially if we lose these shallow aquifers, is that correct?

Mr. LAMB. Yes, that would be correct.

Mr. HASTERT. And also then in the scheme of the water there, we do not have the advantage of years ago in Kentucky and other places. You know that just because of the watershed, the Great Lakes tend to be our containers for water. That is where is our watersheds go basically, and then down the Illinois basin into the Mississippi basin. There are not really a lot of retaining areas for water, are there? I mean we do not have many city reservoirs or county reservoirs for water. They just have never been needed and never been built.

Mr. LAMB. That is right. There are very few and, as I think the experience last summer showed, many of them are inadequate in cities like Decatur, Springfield, and Bloomington.

Mr. HASTERT. So what is happening in essence is that the Midwest, which has never really had a severe water shortage before is being even more severely impacted in some areas that have tradi-

tionally been short of water because we are losing our aquifers and our primary source of water.

Mr. LAMB. Yes, and there has been less of a preparedness because of the previously favorable situation.

Mr. HASTERT. Mr. Tankersley, we just have a couple of minutes. I just want to ask you a question.

I know the involvement of Farm Home Administration in providing funds in small communities to help get local water systems on line. Do you do anything with individual farms so that you help provide loans for farmers so they can begin building stock ponds and things like that?

Mr. TANKERSLEY. Well, through the soil conservation service——

Mr. HASTERT. But that has become—I mean that is gone. That is history, right?

Mr. TANKERSLEY. No, we still have a rural water supply purpose that we are implementing project work for. This provides some water for——

Mr. HASTERT. Would you talk in the mike? I cannot really hear you.

Mr. TANKERSLEY. This provides water for farmsteads, for collections of houses in rural areas and in the unincorporated settlements, this sort of thing, and occasionally for some small villages or towns.

Mr. HASTERT. So my constituents that come to me and say that they have got 500 head of cattle out there and that they are losing their shallow wells—they do have some access to start to build if they get loans to borrow money to start building stock ponds and some reservoirs, and things like that?

Mr. TANKERSLEY. Not individually. Now if there is a project——

Mr. HASTERT. It has to be a collective project?

Mr. TANKERSLEY. It must be sponsored by a local unit of government.

Mr. HASTERT. So I mean it has to be a county or a township or a city that does this?

Mr. TANKERSLEY. Right.

Mr. HASTERT. But there is not any local ability for individuals to start to prepare for this?

Mr. TANKERSLEY. Whether there are Farmers Home Administration operating loan programs or other loan programs that provide money for that specific purpose for an individual farm operator, I do not know.

Mr. HASTERT. All right. That was just a question I had. We are short of time.

Mr. Chairman, I thank you for giving me the ability to ask some questions and I appreciate the panel's cooperation.

Mr. NOWAK. Well, thank you very much, Mr. Hastert.

Unfortunately the time rang and I had some other questions. In answer to your question we will tell Mr. Hopkins to go to the Farmers Home Board and Soil Conservation Service to see if he can get that small loan to cover this project, except he would not qualify, right? [Laughter.]

But let me thank the panel for staying with us the whole day. We were hoping to have you out by 12 o'clock because I had other things that I cancelled too.

But thank you very much for your testimony. It is comprehensive. It gives a good first step into this whole area in trying to comprehensively take a look at all the water problems and opportunities out there and try to rationalize, very frankly, all of the Congressional mandates that all the agencies are living with.

And we are going to try to do that hopefully with the cooperation of a White House Conference. We are going to move ahead in this area and we are going to keep the record open for certainly future questions.

We want to thank you again for spending all this time with us.

The Subcommittee stands in recess.

[Whereupon, at 3:20 p.m., the Subcommittee recessed, subject to the call of the Chair.]

[The prepared statements of Dr. Dickey, Mr. Duvall, Mr. Tankersley, and Dr. Lamb follow:]

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY OF THE ARMY (CIVIL WORKS)
COMPLETE STATEMENT OF
DR. G. EDWARD DICKEY
BEFORE THE
WATER RESOURCES SUBCOMMITTEE
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

Mr. Chairman and Members of the Subcommittee, I am G. Edward Dickey, Deputy for Policy and Evaluation, in the Office of the Assistant Secretary of the Army for Civil Works. With me today is Mr. Donald B. Duncan, Chief of the Policy Development Branch, with the Army Corps of Engineers Civil Works Directorate.

I am pleased to be here to represent the Department of the Army before this Subcommittee to discuss the Army's role in assisting states and local interests in the development of their water supplies. I will explain Army's pricing policies for both municipal and industrial and agricultural water supply as requested in your letter of March 14, 1989.

Mr. Chairman, after briefly discussing the legal and policy framework for Army's participation in providing water supply for municipal, industrial, and agricultural uses, I will focus my remarks on pricing and repayment; provide an overview of the Army's emergency water supply authorities; and lastly, discuss

the adequacy of Army's authorities to implement the water supply mission Congress authorized.

MUNICIPAL AND INDUSTRIAL WATER SUPPLY AUTHORITIES

In the area of municipal and industrial water supply, the Army derives its general authority from the Water Supply Act of 1958, as amended, and Section 6 of the Flood Control Act of 1944.

Water Supply Act of 1958 as Amended

The Water Supply Act of 1958 establishes a policy of cooperation in development of water supply storage for municipal and industrial uses as a purpose of a civil works project when certain conditions of non-Federal participation are met. Water supply service provided by the Army consists of storage space in a reservoir for use in regulating the flow of water so that it is useful for water supply purposes by the non-Federal sponsor. Water supply contracts do not involve the sale of water; any necessary water rights are obtained by the non-Federal sponsor.

Before municipal and industrial water supply storage space is included in a civil works project, the demand for municipal and industrial water in the region of the project and the alternatives for meeting that demand are evaluated. If including water supply storage in the Federal project is the most economic alternative for the sponsor for meeting the need for water supply, and if the addition of water storage represents the best use of the storage space when compared to its use for other purposes, such storage may be provided if the sponsor agrees to the required financial commitments.

We do participate and cooperate with States and local interests in providing such storage in connection with the construction, maintenance, and operation of Federal navigation, flood control, or multiple purpose reservoir projects and under the 1958 Act. Provision for water supply storage can be made at completed projects, as well as projects in the planning stage. At the present time, the Army operates 115 such projects containing about 9.5 million acre-feet of storage for municipal and industrial water supply. This represents an investment of over $1 billion in water supply storage.

Section 6 of the Flood Control Act of 1944

Section 6 of the Flood Control Act of 1944 authorizes the Secretary to enter into contracts with States, municipalities, private concerns, or individuals for the use, for domestic and industrial purposes, of surplus water available at Army reservoirs. These contracts provide for the use of stored water for a specific period of time pending development of the authorized purposes.

MUNICIPAL AND INDUSTRIAL WATER SUPPLY PRICING POLICIES

Storage

Policies with respect to the sale of storage space in our projects can be grouped into three distinct categories. The first category is storage not under contract, but included in an existing reservoir for future municipal and industrial use. At present we have about one million acre-feet of uncontracted storage. The second category addresses the construction of new reservoirs that include water supply storage space when it makes economic and environmental sense. The third policy category

covers cases where we take storage space away from other project purposes for water supply use. This reallocation of storage for water supply is becoming increasingly important in areas where uncontracted storage is not available. Modification of existing projects in this manner allows us to better meet contemporary demands and to manage our projects in accord with new priorities.

Because water supply is a private economic good, it is sometimes provided by private suppliers, although state and local governments supply most of the water for municipal and industrial use in this country. As a private economic good, municipal and industrial water supply is a fully vendible output. That means it is a good similar to those produced by the market sector, and its costs can be fully recovered from the users if the service is a sound economic investment. As a fully vendible service, users should pay the full cost of storage space in new Army projects. This helps insure that only sound economic choices will be made regarding the use of water and pace of its development. That is why Army supported the sections of the Water Resources Development Act of 1986 that shortened the repayment terms for water supply and removed certain other subsidies that had characterized water supply policies of the past. Appropriate pricing encourages conservation and wise use of the Nation's limited water resources.

Current Army policies require that non-Federal interests pay, annually, all operation, maintenance, major rehabilitation, and replacement costs allocated to water supply storage. In addition, capital investment costs are either paid during construction or recovered over time depending on the project and type of storage as follows:

Pricing of Existing Projects With Uncontracted Storage

Where municipal and industrial water supply was an original project purpose at existing projects or at projects under construction prior to enactment of the Water Resources Development Act of 1986, contracts for present or future use of water supply storage can be entered into pursuant to the Water Supply Act of 1958. Regardless of whether the contract provides for immediate or future use of storage space, however, non-Federal interests are required to repay 100 percent of the costs allocated to municipal and industrial water supply plus interest. Where the storage is not used immediately, interest starts to accrue after a 10-year interest-free period starting from the date of completion at an interest rate determined by the Department of Treasury at the time construction was initiated. The repayment period for these contracts is 30 years from the plant-in-service date or the date the first storage contract is signed, whichever is later.

Future use contracts are entered into only if a non-Federal interest agrees to pay operation and maintenance costs annually beginning with the date the contract is signed. Interest on capital costs is also charged, unless the 10-year interest free period has not expired. Payments of those costs are initiated with first use or the end of the interest free period, whichever occurs first. In any case, investment costs begin to be repaid at the time of first use.

Pricing of New Projects

For new reservoir construction initiated after enactment of the Water Resources Development Act of 1986, non-Federal sponsors must also agree to pay 100 percent of the project costs allocated to municipal and industrial water supply generally using the Separable Costs Remaining Benefits method. The Water Resources Development Act of 1986 allows the construction costs to be repaid over a 30 year period following construction of the project. However, we make every effort to recover these costs over a shorter period and to have the sponsor pay for the storage space during the period of construction. We do this for two reasons: (1) our outlays for new project construction are constrained by our limited Federal budget and (2) because before including municipal and industrial water supply storage we have analyzed the alternatives available to the sponsor, and have

shown that the recommended plan is the efficient way for the sponsor to meet its future demand for water. Accordingly, the users of the water supplies can raise the necessary funds through non-Federal financing sources on attractive terms. In appropriate circumstances, we will finance the construction of the storage and allow repayment over a period not to exceed 30 years.

Pricing of Reallocated Storage at Existing Projects

Because we want to make the best use of our reservoir storage overtime, we are responsive to non-Federal requests to review the use of our projects and consider modifications to meet new demands for water supply. The Department of the Army will approve the reallocation of storage space from another project purpose only for immediate water supply use and then only when to do so results in a better use of the project resources and does not seriously impact other authorized purposes. The cost to be repaid to the Government for storage space reallocated to water supply is the higher of either the updated cost of construction or the value of project benefits or revenues foregone as a result of the reallocation. These costs may be repaid over 30 years because no new construction is involved and the Federal investment has already been made.

The use of this procedure promotes the most economic use of the water resource. It also encourages conservation, reduces conflicts among competing interests and provides an appropriate return to the tax payers who originally financed the project. It also ensures that the reallocation of the existing storage space represents the most economic alternative as compared to other alternatives for meeting an evolving demand for water supply.

Use of Surplus Water.

In accordance with Section 6 of the Flood Control Act of 1944 the Secretary may enter into contracts for the use, for domestic and industrial purposes, of surplus water available at Army reservoirs at a reasonable price. Surplus water contracts commonly involve temporary uses and normally require renewal after a 5-year period. The pricing policy for surplus water contracts requires the user to pay on an annual basis no more than the amount equal to the annual payment the user would make under the storage reallocation policy.

AGRICULTURAL WATER SUPPLY

The Department of the Army's authority to include facilities for agricultural water supply in a project is provided by Section 8 of the Flood Control Act of 1944, as amended. This authority

allows the inclusion of irrigation (agricultural) water supply as an adjunct to Army projects upon the recommendation of the Secretary of the Interior. We currently have 52 multi-purpose lake projects with agricultural water supply storage, all of which are in the 17 Western States. When irrigation features are included in Army reservoir projects in the 17 Western States, costs of the Army's project are recovered by the Secretary of the Interior in accordance with Reclamation Law. At new projects, outside the 17 Western States, agricultural water supply costs would be cost shared in accordance with the requirements of the Water Resources Development Act of 1986. This Act requires that a non-Federal sponsor assume 35 percent of the project costs allocated to agricultural water supply and provide all operation, maintenance, rehabilitation, and replacement costs or an amount based on an "ability to pay" procedure established by the Secretary of the Army which ever is more favorable to the beneficiary.

EMERGENCY WATER SUPPLY

In addition to general water supply authorities, Congress has provided the Army with specific emergency authorities to respond to drought and contaminated water supplies.

Drought Assistance

The Drought Relief Act of 1974, as amended, provides the Secretary of the Army authority under certain statutory conditions to construct wells and to transport water to farmers, ranchers, and political subdivisions within areas the Secretary determines to be drought distressed. Army assistance will only be considered when non-Federal interests have exhausted reasonable means for securing necessary water supplies (within the limits of their financial resources) including assistance from other Federal agencies. The cost of transporting water is provided by the Army; however, the cost of purchasing water is the non-Federal interests' responsibility. This authority was used for the first time during the drought of 1988. During this drought, four requests were approved. All four were for transportation of water.

Contaminated Drinking Water Assistance

The Emergency Flood Control Funds Act of 1955, as amended authorizes us to provide emergency supplies of clean drinking water, when requested, to any locality which is confronted with a source of contaminated drinking water causing or likely to cause a substantial threat to the public health and welfare of the inhabitants of the locality. Assistance may only supplement

state and/or local efforts to provide drinking water. Work under this authority requires a request from the governor of the state and a determination by the Corps of Engineers that the source of water has become contaminated. The assistance is temporary and is normally limited to 30 days. Loss of water source or supply is not correctable under this authority. During the 1988 drought one project was approved for hauling potable water to a community.

SUMMARY OF ARMY ACTIONS
DURING THE 1988 DROUGHT AS RELATED TO WATER SUPPLIES

The 1988 drought was one of the worst on record for much of the United States. The Army was heavily involved in the support of numerous initiatives to deal with drought related problems. In addition, the Army modified the operation of a number of its projects to conserve water and alleviate the effects of the drought while still serving authorized purposes.

As we worked to help overcome the effects of the drought we learned that current authorities making water stored in Army reservoirs available are sufficient to allow us to respond to drought conditions on a short-term basis with one exception, we lack authority to make even small amounts of water available to farmers for agricultural use. Existing authorities for

addressing requests for water do not provide full flexibility to respond to emergency needs for the temporary use of water or reservoirs. The legislative proposal we submitted to Congress last year addressed this problem.

FISCAL YEAR 1989 DROUGHT OUTLOOK

Looking ahead, it is not feasible to forecast whether dry conditions will continue to affect the Nation's rivers and reservoirs during the summer of 1989. However, we are storing water, within authorized reservoir operating authority, to ensure water is available to supplement other available supplies for a wide range of purposes if a drought does occur. This is being done in cooperation with State and local authorities.

Moreover, the Corps Headquarters drought management team has been activated and we have started monitoring regional conditions throughout the nation in order that we may be ready to respond if drought conditions occur again this summer. We are also meeting regularly with other Federal Agencies to ensure Federal activities will be coordinated as they were last year under the aegis of the President's Interagency Drought Policy Coordinating Committee.

LONG TERM DROUGHT PLANS

Looking at the long-term, we have proposed in the Fiscal Year 1990 Budget submission a multi-year study of alternative ways to manage the Nation's water resources, both short-term and long-term, in order to better deal with droughts. The budget request is for the study of "National Water Management During Drought." Each year we will reevaluate whether the study should be continued. This study will also examine the adequacy of our drought response authorities under a broad range of scenarios and recommend appropriate changes.

CONCLUSION

In conclusion, Mr. Chairman, the Army supports development of water supply as an adjunct to a civil works multi-purpose project if the addition is economically justified, is the best use of the water resource, and the sponsor agrees to the terms of non-Federal participation.

We feel that we have managed the water resources projects authorized by Congress well. We further believe that we need to

assure that storage in existing projects is used for the most beneficial purpose in view of the large investment it represents. Therefore, we intend to continue to manage these projects in a way that is responsive to evolving demands over time.

Mr. Chairman, that concludes my statement. I would be pleased to address any questions you or other members of the Subcommittee may have.

THE FOLLOWING QUESTIONS WERE SUBMITTED FOR THE RECORD
BY THE HONORABLE ARLAN STANGELAND

Mr. Stangeland: In assessing the economic justification of water supply features for a multi-purpose reservoir, what facts do you consider? Are you limited to only national benefits or are you permitted to include also local and regional effects?

Dr. Dickey: Municipal and industrial (M&I) water supply is considered the primary responsibility of municipalities or non-Federal entities. However, M&I storage may be recommended for inclusion in any Corps reservoir if such storage space is economically justified, and there is reasonable evidence that the costs allocated to water supply will be paid by the user.

In the evaluation of all Corps projects, the so called national economic development (NED) benefits are the primary basis for determining whether to propose the project or feature. In the case of water supply, these NED benefits are merely the sum of the direct benefits to the users of the water. Consequently, local and regional considerations are inherent in the NED analysis.

Mr. Stangeland: Could you provide the committee with some indication of how frequently local sponsors are unable to participate in a multi-purpose reservoir due to lack funds?

Dr. Dickey: We do not keep statistics on local sponsor unwillingness to participate in reservoir projects. However, with respect to water supply such a situation would indicate that local sponsors have cheaper alternatives available.

Mr. Stangeland: How are recreation benefits determined in the cost benefit analysis of a Corps project?

Dr. Dickey: Benefits arising from recreation opportunities created by a project are measured in terms of willingness to pay for each increment of supply provided and considers both recreation gains and losses. There are three generally acceptable procedures to evaluate proposed projects: the travel cost method; the contingent valuation method; and the unit day value. The procedure used depends upon the size of the recreation benefit created, displaced, or transferred by the proposed project and the nature of the recreation activities affected. All methods are designed to measure the participation rate and value to the users of the recreation opportunity.

Mr. Stangeland: Is there a need for the Corps to have more flexibility in negotiating cost sharing arrangements?

Dr. Dickey: Our experience has been that having clearly fixed cost sharing and other requirements facilitates reaching agreements that are acceptable to sponsors and to all levels within the executive branch. In a decentralized organization such as the Corps, simple cost sharing formulas are essential to a nationally consistent program.

Mr. Stangeland: Please describe your efforts to date to implement the "ability to pay" provisions of the 1986 Water Resources Development Act. How is the Corps addressing agricultural water supply projects? For flood control, how many requests for waivers has the Corps received and how many has the Corps granted?

Dr. Dickey: We published an interim final rule for flood control projects in September, 1987, and this rule remains in force. We have prepared a final rule and it is in the final stage of review within the Administration. While there will probably be some minor changes to the interim rule, we expect the basic structure of the rule to be the same. In July, 1988, we updated state and county per capita income figures with new data provided by the Commerce Department's Bureau of Economic Analysis. We will be providing another update this summer.

We concentrated our efforts on implementation for flood control projects because we had no pending cost sharing agreements involving agricultural water supply. We have nonetheless been considering the issues that might be involved for agricultural water supply, and we are prepared to discuss conceptually what we are considering.

For almost every agricultural water supply project, we are dealing with a product that can be sold to the individual users who receive the benefits from the project. Since any project we would approve for construction would have a benefit cost ratio at

least equal to one, it follows that project recipients should over time, be able to pay not only the 35 percent of construction costs required by the 1986 Water Resources Development Act, but the full costs of construction. Since the law limits the non-Federal share to 35 percent of project costs, we believe that ability to pay considerations should be directed primarily at the timing of the local payment rather than the share itself.

There are no waivers given under the flood control test since the test does not exempt any project totally from local cost-sharing. We have applied the test to every flood control cost sharing agreement since publication of the Interim Final Rule. In five cases (one major project[1] and four smaller projects[2]), application of the test has resulted in a lower non-Federal cost share.

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[1] - Threemile Creek AL

[2] - Upper Gordon's Creek, Hattiesberg MS
Tallahala Creek, Laurel MS
Magby Creek. Columbus MS
Lake Guntersville, Guntersville AL

Mr. Stangeland: If Congress were to seek legislation to require more consistent cost sharing among all agencies involved in water projects, what process do you believe would work best for all agencies?

Dr. Dickey: My suggestion would be to have a cost sharing and financing formula for each water resource purpose, such as agriculture or municipal and industrial water supply, applicable to all Federal agencies.

Mr. Stangeland: What opportunities do you see for a greater Federal-State partnership to promote Corps funding?

Dr. Dickey: We are making every effort possible to obtain non-Federal financing for development of vendible purposes such as water supply. The mutual savings associated with multiple-purpose development can be captured to the maximum extent possible via this approach. The limited funds available would be used to implement a larger number of projects that serve water supply and purposes such as flood control. It is possible that additional opportunities exist to modify the manner in which existing reservoir projects are operated and maintained which might make some funds presently dedicated to that purpose available for new construction.

Mr. Stangeland: Groundwater is being recognized as a long neglected resource How is your agency involved with ground water and how could your agency make better use of this valuable resource?

Dr. Dickey: Groundwater is considered as an alternative to developing new storage where it is available. In addition, the Corps has assisted States in the development of plans to manage this resource. Several existing multi-purpose projects have included specific authority for the replenishment of groundwater supplies. In those projects, water impounded in controlling floods is diverted and spread over the groundwater aquifer to be replenished. The diversion and replenishment must be accomplished by local interests. Where not specifically authorized, project operations to enhance groundwater replenishment may be conducted, consistent with authorized project purposes and law. Current policy dictates that costs for changes in project operations due to groundwater recharge objectives requires that a non-Federal sponsor be responsible for payments or repayments equalling the following:

1. New construction and operation costs (100%).
2. A share of joint-use project operation, maintenance, replacement cost, based on use-of-facilities storage allocation;
3. Benefits forgone;
4. Compensation to other for losses in their operation; and
5. An amount equal to one-half the savings to the benefited non-Federal sponsor (least cost alternative minus the specific costs of the modification listed in 1 and 4 above).

Mr. Stangeland: In assessing the cost of reallocating storage to water supply, the Corps policy is to charge the higher of either revenues or benefits forgone, the replacement costs, or the updated costs for storage. Could you provide us with some indication as to how often each of these conditions governs?

Dr. Dickey: In most all recent reallocations, the updated cost of storage has proven to be the highest method for pricing. In a few instances the replacement costs of hydropower is nearly equal to the updated cost of storage.

Testimony of Commissioner Dale Duvall
Bureau of Reclamation
Before the Committee of Public Works and Transportation
Subcommittee on Water Resources
April 26, 1989

I am pleased to appear before the subcommittee today to discuss the water pricing policy and procedures of the Bureau of Reclamation (Reclamation). For purposes of background regarding our agency, I will present a brief description of our origins and accomplishments.

In 1902, Congress established the Reclamation program to assist the settlement of the arid American West through agricultural development of the region. As the population and economy of the 17 Western States grew, the original single-purpose mandate for irrigation was expanded and Reclamation was authorized to develop multipurpose projects to help meet Western needs for municipal and industrial (M&I) water, hydroelectric power, flood control, recreation opportunities, environmental enhancement, and salinity control.

Today, through the investment of $9.4 billion, Reclamation has developed an infrastructure of over 300 dams and dikes, 51 hydroelectric powerplants, and hundreds of miles of canals, pipelines, and tunnels that provide extensive benefits to the entire nation.

- Reclamation projects annually deliver 10 trillion gallons of water to over 25 million people for agricultural and municipal and industrial purposes.

- Crops valued at $8 billion are grown every year on almost 10 million acres of farmland served by Reclamation projects.

- The 51 hydroelectric powerplants provide enough electrical energy to meet the residential needs of 15 million people.

- Recreation areas on Reclamation projects annually attract some 75 million visitors.

- Flood control features on Reclamation projects produce an average annual benefit of $211 million in damages averted.

From the outset of the program, the Reclamation Act of 1902 required the repayment of the Federal irrigation investment by project farmers in 10 annual installments without interest. Subsequent experience revealed that farmers were finding it difficult to repay the investment within the allotted time. During the 1920's, Congress passed several acts, particularly the Fact Finders Act of 1924 and the Omnibus Adjustment Act of 1926, to defer the time for repayment and to provide other financial relief to farmers. These conditions began an evolution to the financing and repayment arrangements in effect today.

The conceptual and legal basis for the water pricing policy is the historical Federal cost of providing and actual cost of continuing the service. It is not what would generally be considered to be a market price. Consequently, it is necessary to describe the derivation of the costs of providing service for the various functions, including irrigation and M&I water service. It should be noted that the rights to the use of the water stored and delivered by Reclamation project facilities are obtained pursuant to State law and may be

issued in the name of the Federal Government or other public organizations and private individuals.

Since most water resource projects constructed by the Bureau of Reclamation are multiobjective and multipurpose in nature, the initial step in determining repayment obligations was to allocate project costs among the objectives or purposes served. It is useful to bear in mind a distinction between cost allocation and repayment of the reimbursable functions.

Cost allocation is concerned with the distribution of total project costs among the purposes served by a project according to relatively straightforward principles of economic efficiency and equity.

The most widely accepted method of cost allocation is the separable costs-remaining benefits method more commonly referred to as the SCRB (Scrub) procedure. The result is that multipurpose project costs are allocated among purposes in proportion to the relative magnitude of benefits accruing from each purpose. No purpose is supported by the benefits of another purpose, and each purpose receives its fair share of the advantages resulting from the multipurpose development plan. Cost allocation is independent of repayment policy. Ability to repay and preconceived notions of desirable water rates do not influence the allocation of project costs among purposes. Once the allocation has been performed, the cost sharing, up-front financing and repayment laws and policies determine the manner of funding and repayment of reimbursable costs for each group of project beneficiaries.

Once costs have been allocated, repayment policy is concerned with the amount and manner by which costs allocated to a purpose will be repaid. This involves a broader range of considerations with respect to national goals and objectives, and the repayment ability of the beneficiaries. It also provides a basis for cost sharing or up-front financing by non-Federal interests during project development.

The Reclamation Project Act of 1939 provided for irrigation repayment to be based on the irrigator's ability to pay for water from the increased net income received from irrigated farming. In order to measure this level of repayment, Reclamation utilizes farm budget analyses to determine the ability to pay for the allocated costs to irrigation. On projects that are in the planning or construction stage, the inservice date together with a development period, when appropriate, is estimated. Farm sizes and crop yields are projected to that date. Farm budgets are based on representative full-time family size units with and without the project. Returns to increased labor, management, and capital are deducted from the increased net farm income resulting from the project to determine payment capacity.

Contracts for the repayment of the irrigation construction obligation are based on the payment capacity remaining after operation, maintenance, and replacement (OM&R) costs have been deducted. Section 9(d) of the 1939 act provides for irrigation repayment contracts which provide for the repayment of fixed obligations by the contracting districts. Most states require voter approval by the members of a district for fixed obligation contracts and will not permit revision of the contract after it is executed without going through

the approval process again.

Section 9(e) of the 1939 act provides for irrigation water service contracts which may provide for renewal at the end of 40 years and are more amenable to review of the payment capacity at 5-year intervals. There are a number of ratesetting and cost-recovery procedures in use for water service contracts, e.g., cost of service or payment capacity, whichever is less, was adopted for the Central Valley Project in May 1988 for irrigation water service contract renewals.

It is Reclamation's policy to collect 100 percent of remaining payment capacity after OM&R costs have been deducted. While this represents payment capacity and estimated OM&R costs for the first year of full development and production of the project, no adjustment in the payments on the construction obligation for fixed obligation contracts will be made to account for increasing OM&R costs or ability to pay. For water service contracts, the current OM&R costs will be reflected as a part of the reanalysis of payment capacity at 5-year intervals.

Under current Reclamation law and policy the costs allocated to irrigation are repaid without interest usually over a 40-year repayment period. In most of Reclamation's operating area, assistance is available from Federal power revenues to repay the costs that are beyond the irrigators' ability to pay. Irrigation assistance is typically repaid toward the end of the repayment period. Thus, 100 percent of the construction costs allocated to irrigation are repaid without interest. However, under the provisions of the Reclamation

Reform Act of 1982, certain land holdings are required to pay the full cost of water, which includes interest charges.

Although Reclamation focused on irrigation development in the earlier years, the need for municipal and industrial water in the West was a growing concern as well. Development of storage for M&I supplies began in the 1920's and has increased in importance over time. Our role in the provision of M&I service is primarily for storage and major delivery facilities.

The basis for the repayment of costs allocated to the M&I function was established in the Reclamation Project Act of 1939 and the Water Supply Act of 1958. The 1939 act provides that costs for the M&I function are to be repaid with interest over 40 years. The Water Supply Act of 1958 recognizes the primary responsibilities of the states and local interests in developing water supplies for domestic, municipal, industrial, and other purposes, and authorizes the Federal Government to participate with the states and local interests in developing such water supplies in connection with the construction, maintenance, and operation of Federal navigation, flood control, irrigation, or multiple-purpose projects.

The Water Supply Act permits storage capacity to be included in any Bureau of Reclamation or Corps of Engineers reservoir for present or anticipated future demand or need by states or local interests for municipal or industrial water. The costs allocated to M&I water are fully reimbursable, with interest, over a 50-year repayment period. The interest rate for newly authorized projects for the current fiscal year would be 10.25 percent. The average interest rate for

existing contracts is significantly lower. Repayment on up to 30 percent of the project storage included to meet future demand can be deferred, with no payment required for the block of water allocated to future demand until it is first used. However, repayment is required within 50 years. No interest is charged on this block of water for a period up to 10 years or until such supply is first used.

Although Reclamation will continue to have a role in building projects, water transfers will be an increasingly important means of meeting water needs. These transfers have the potential for improving the efficiency of already developed water projects. The Department of the Interior has recently developed a set of policy guidelines to assist in these transfers. These principles provide the basic policy framework to deal with the increasing number of requests for assistance in facilitating water transfers.

Reclamation has also used a combination of administrative, judicial, and legislative provisions to permit the change of water use. For example, on the Seedskadee Project in Wyoming it was determined after the project was constructed that irrigation would not be a viable function. The State of Wyoming agreed to contract for the water and convert its use to M&I to meet these needs within the State.

In California, we are presently engaged in the procedures for contracting for the remaining uncontracted water for M&I water supply, irrigation, and other purposes in the Central Valley Project. A draft environmental impact statement has been filed and is currently in the public comment period. Also,

we are reviewing legislation for a project in Utah which will accommodate the sale of water originally developed in anticipation of the oil shale industry.

In addition to Reclamation Law, the Bureau of Reclamation operates under a January 24, 1984, letter from President Reagan to Senator Laxalt, which established a seven-point financing and cost-sharing policy for water projects. Under this policy, Reclamation is continuing to seek out new partnership arrangements with the States and other non-Federal interests in the financing and cost sharing of all proposed projects. We are negotiating financing arrangements for such projects within our area of responsibility, and have obtained substantial non-Federal financing for Plan 6 of the Central Arizona Project. We believe project beneficiaries, not necessarily governmental entities, should ultimately bear a substantial part of the cost of project development. Prior commitments to individual States with regard to water development within their borders are being considered and are a factor in negotiations leading up to project construction. Consistency in cost sharing for individual project purposes, with attendant equity, is being sought.

The costs incurred by the Federal Government in project planning generally will be shared with project sponsors. Currently, we are requiring a 50 percent cost share with the sponsors.

Once financing, cost sharing, and cost recovery arrangements are agreed to, they will be reviewed by the Office of Management and Budget and submitted to the Congress. Under this policy, a case-by-case negotiation process is being followed which permits voluntary cost-sharing to exceed the minimum

requirements for repayment.

In summary, Reclamation's procedures for establishing the rates charged for providing water service to beneficiaries are derived from several statutes and administration policies. They are based on recovery of the Federal cost of providing the service and not on a commodity based market price.

This concludes my testimony. I would be pleased to provide any additional information the subcommittee may want for the record. I wish to thank the subcommittee for your interest in our program.

Statement of Howard C. Tankersley, Director

Watershed Projects Division

Soil Conservation Service

United States Department of Agriculture

USDA Testimony before the U.S. House Subcommittee on

Water Resources of the Committee on Public Works and Transportation

Washington, D.C.

April 26, 1989

Mr. Chairman and members of the subcommittee, I am pleased to have the opportunity to appear before you today to discuss the U.S. Department of Agriculture, Soil Conservation Service's water resource project activities relating to water supply and the program policies relating to water supply pricing.

The small watershed protection and flood prevention program authorized by Public Law 83-566 and administered by the USDA, Soil Conservation Service has water supply as one of the eligible project purposes. Since passage of Public Law 83-566 in 1954, SCS has authorized 1,462 projects. As the principal purpose is to provide flood prevention and erosion control, the vast majority of our projects have been for these purposes. We have, however, in accordance with provisions of the law, funded 218 projects which have a water supply component to provide water for irrigation, rural water supply, and/or municipal and industrial water supplies.

The small watershed projects are unique: unlike other federal projects in which the federal government funds, owns, and operates the project and sells water to the public. Instead, each small watershed project is developed at the request of and in partnership with a local sponsoring organization. This local sponsoring organization is a unit of state government that owns, operates, and maintains the project after completion. The local unit of government assumes all costs of this operation. Federal input to the small watershed program is limited to providing the technical assistance necessary to plan and design project features and to provide construction cost sharing for installation of approved project features. The law has set the federal construction cost sharing at 50 percent for water supply features which are included in approved Public Law 83-566 plans. An administrative restriction denies any federal cost sharing to provide municipal and industrial water supply. When this feature is present in a project the entire cost must be paid by the local project sponsor.

The SCS does not have a water pricing policy for deciding to include a water supply feature in a Public Law 83-566 project. The water supply feature is included as an alternative in a project when requested by the sponsor and incorporated in the least costly way in conjunction with other flood retarding and erosion control works. The sponsor then makes the judgment to retain the water supply feature knowing they must pay at least 50 percent and sometimes all the construction cost of the water supply. Pricing of the water is controlled by the project sponsors and is set at a rate to recoup local capital costs and expected operation and maintenance costs.

I would be pleased to answer any questions you might have on the water supply activities of the Department of Agriculture.

United States Department of Agriculture
Soil Conservation Service
P.O. Box 2890
Washington, D.C.
20013

JUN 8 1989

Honorable Arlan Stangeland
House of Representatives
Washington, D.C. 20515

Dear Congressman Stangeland:

This is in response to your additional questions prompted by the Department of Agriculture (USDA) Water Supply Hearing of April 26, 1989. Our responses are in the same sequence as the questions.

Both irrigation water supply and rural water supply are considered agricultural water management for cost allocation purposes and SCS can cost share up to 50 percent for construction of watershed improvements for these purposes. Municipal and industrial water supply (M&I) is considered non-agricultural water management. Although the Act (Public Law 83-566) allows a 50 percent cost-share rate for present M&I water demands, authority to cost-share has not been granted by the Office of Management and Budget. Engineering and other technical assistance costs for agricultural water management purposes are allocated to the Soil Conservation Service (SCS) and those for non-agriucltural management are allocated to nonfederal parties.

The Farmers Home Administration (FmHA) is deeply involved with water supply development in rural areas. Their records for Fiscal Year 1988 indicate 29,299 outstanding loans valued at $9.8 billion and 13,619 grants totalling $3.1 billion for water and waste facilities. About 54 percent of these efforts were applied to water supply and distribution systems. Joint undertakings between SCS and FmHA are encouraged in order to provide disadvantaged groups affordable water supplies of adequate quantity and quality. To our knowledge no other USDA agency is involved in water supply.

It is required that sponsors have up-front financing for their share of any construction costs prior to the advertisement for a construction contract. Sponsors may apply for an advance of funds to cover their costs of M&I water storage. The advance is provided from SCS funds in the form of a loan administered by FmHA. Interest and repayment of the principal can be deferred for 10 years or until the water is first used, whichever comes first. The advances may include local engineering costs not to exceed 5 percent of the construction cost for M&I water supply.

The separable costs--remaining benefits method is currently used to allocate cost of all multiple-purpose reservoirs.

Local sponsors are required to justify the need for M&I water and to quantify the storage capacity for present and future demands. Justification is based on local or regional demands. National consideration would be more abstract, i.e., the concern for public health and safety and preservation of the natural environment.

USDA has long recognized the contribution adequate ground water makes to the well being and continued prosperity of our great Nation. Irrigation accounts for about 80 percent of all water consumed and for about 70 percent of all ground water withdrawn in the United States. Improved irrigation provides the greatest opportunity for significant water conservation. Measures are needed that provide greater efficiency for the delivery and application of water and improved irrigation water management. Many producers are not able to install water conservation measures and improve irrigation water management without technical and financial assistance.

SCS targets technical and financial assistance to geographic areas that are water-short and that are most vulnerable to seasonal droughts. We assist landowners and operators improve water management by using forecasts of water supply availability, irrigation scheduling, developing farm or ranch conservation plans that balance agricultural activity with the water and land resource base, adapting drought-tolerant plants, and using the most efficient irrigation systems; and take advantage of available moisture by increasing the soil moisture holding capacity with conservation systems that improve soil tilth.

Through Public Law 83-566 Projects and other programs, we help local units of government and districts to plan and implement water supply and water saving projects. The Wellton-Mohawk project in Arizona is an example of how we work with irrigators to improve water use efficiencies.

We also work with states to plan and implement conservation measures for optimizing the use of limited water supplies. States can use the information as a basis for adopting administrative procedures or modifying law to promote water conservation.

"for" Herman A. Calhoun

HOWARD C. TANKERSLEY
Director
Watershed Projects Division

TESTIMONY ON CLIMATE FLUCTUATIONS AND WATER RESOURCES
26 April 1989

Submitted to the Public Works Subcommittee
on Water Resources
U.S. HOUSE OF REPRESENTATIVES

by

Peter J. Lamb

Head, Climate and Meteorology Section
Illinois State Water Survey
and
Professor, Departments of Atmospheric Sciences and Geography
The University of Illinois

I appreciate the opportunity to present my thoughts to the Subcommittee on the important issues of climate fluctuations and their impacts on water resources. My principal organization (the Illinois State Water Survey) has addressed these subjects from an Illinois perspective for many years. Furthermore, beginning in 1987, our establishment and operation of the Midwestern Climate Center has broadened our climate-water resources responsibilities to include eight other states (Indiana, Iowa, Kentucky, Michigan, Minnesota, Missouri, Ohio, Wisconsin) in addition to Illinois. The Midwestern Climate Center's primary function is to provide high quality climate information to private and public sector users in the above states, and particularly to managers involved in water resources, agriculture, transportation, and energy generation and provision. The climate information being furnished to such users is rooted in focused applied research that identifies the key weather and climate sensitivities of the economic activities concerned. The Midwestern Climate Center, along with four other sister Climate Centers that collectively now span most of the lower 48 states, was established and operates with Congressional funding. It is from this background that I appear before you today.

The climate of the Midwest has varied substantially during the past 10-12 years, and much more than was characteristic of the preceding 20+ year period running from the mid-1950's through the mid-1970's. Particularly prominent among the recent climate extremes have been the summer heat wave and drought conditions of 1980, 1983, and 1988 that resulted in greatly reduced crop yields; the much cooler and more moist summers of 1979, 1981, 1982, 1985, and 1986, for which Illinois established or equaled corn yield records; the extreme cold of the 1976-77, 1977-78, 1978-79, and 1981-82 winters that greatly increased energy consumption; and the very snowy 1978-79 winter that paralyzed the Chicago transportation system for many weeks and had local political repercussions. These extremes graphically illustrate that climate does vary from year to year, and that such variations can have profound impacts on a wide

range of economic activities. It is not surprising that managers in many economic sectors have had difficulties in dealing with these climatic fluctuations. In planning for the future, it would be wise to assume that such variability will continue.

The continuing 1988-89 Midwestern drought conditions are particularly illustrative of both the character of a pronounced climate fluctuation and the resulting impacts on water resources. The most unique aspect of the 1988 drought conditions was the extreme dryness during April-June, months that typically receive abundant precipitation in the Midwest. For this period as a whole, the 9-state Midwestern region received only about 47% of its normal precipitation. For the month of June alone, Midwestern rainfall was only 28% of average. As a result, the April-June period was drier in 1988 than in any other year since 1900 in Iowa, Missouri, Wisconsin, Illinois, Michigan, Indiana, and Ohio. Kentucky experienced its second driest April-June period since 1900 in 1988, and Minnesota its third driest period. While Midwestern precipitation improved progressively for July (80% of average), August (101%), and September (110%) of 1988, precipitation deficiencies have characterized every subsequent month except November 1988 (170% of average). In fact, January-April 1989 (79% of average) has been marginally drier than January-April 1988 (82%). The areas that have experienced the most pronounced precipitation deficiencies since October 1, 1988, include northwestern and southern Minnesota, southwestern Wisconsin, all of Iowa except its extreme northwestern corner, northwestern and west-central Illinois, and northwestern Missouri. In contrast, precipitation abundance has been confined to the southern extremity of the Midwest (the far southern portions of Missouri, Illinois, and Indiana, and all of Kentucky) and some areas bordering the Great Lakes (northeastern Minnesota, northwestern Wisconsin, Michigan's upper peninsula, and eastern lower Michigan). In summary, from a recent precipitation standpoint we are today in a very similar situation in the Midwest to where we were at the same time last year.

It is therefore instructive to examine what happened to Illinois' water resources as the early 1988 precipitation deficiency persisted into the following summer, and how the water resources situation there has evolved through the subsequent fall and winter. I use Illinois as the example here, primarily because more relevant data are readily available at this time. My organization regularly monitors the soil water, surface water, and ground water conditions across Illinois. However, I believe that the Illinois results are representative of other Midwestern areas that experienced similar precipitation.

Because the rainfall deficiencies of May-June 1988 coincided with the strong plant-water demands of early crop development, there was a rapid concurrent depletion of upper-layer soil water across Illinois. As a result, by the end of June 1988, almost all of the state's soils contained less than 25% of the water that could be extracted by plants from the upper 20 inches of soil. This situation persisted through the end of August 1988, with the improved July-August rainfall being immediately consumed by the plants rather than enhancing soil water availability in the longer-term. By the end of August, the central third of Illinois was experiencing similarly low soil water availability in even the deeper 20-40 inch layer. Although the winter

precipitation has recharged the soil water in the southern one-third of Illinois where that precipitation has been most abundant, deficiencies remain elsewhere, particulary in the west central and northwestern parts of the state that have experienced the lowest precipitation since October 1. At the current time, the soil water status across the northern two-thirds of Illinois is generally less favorable than at the same time last year.

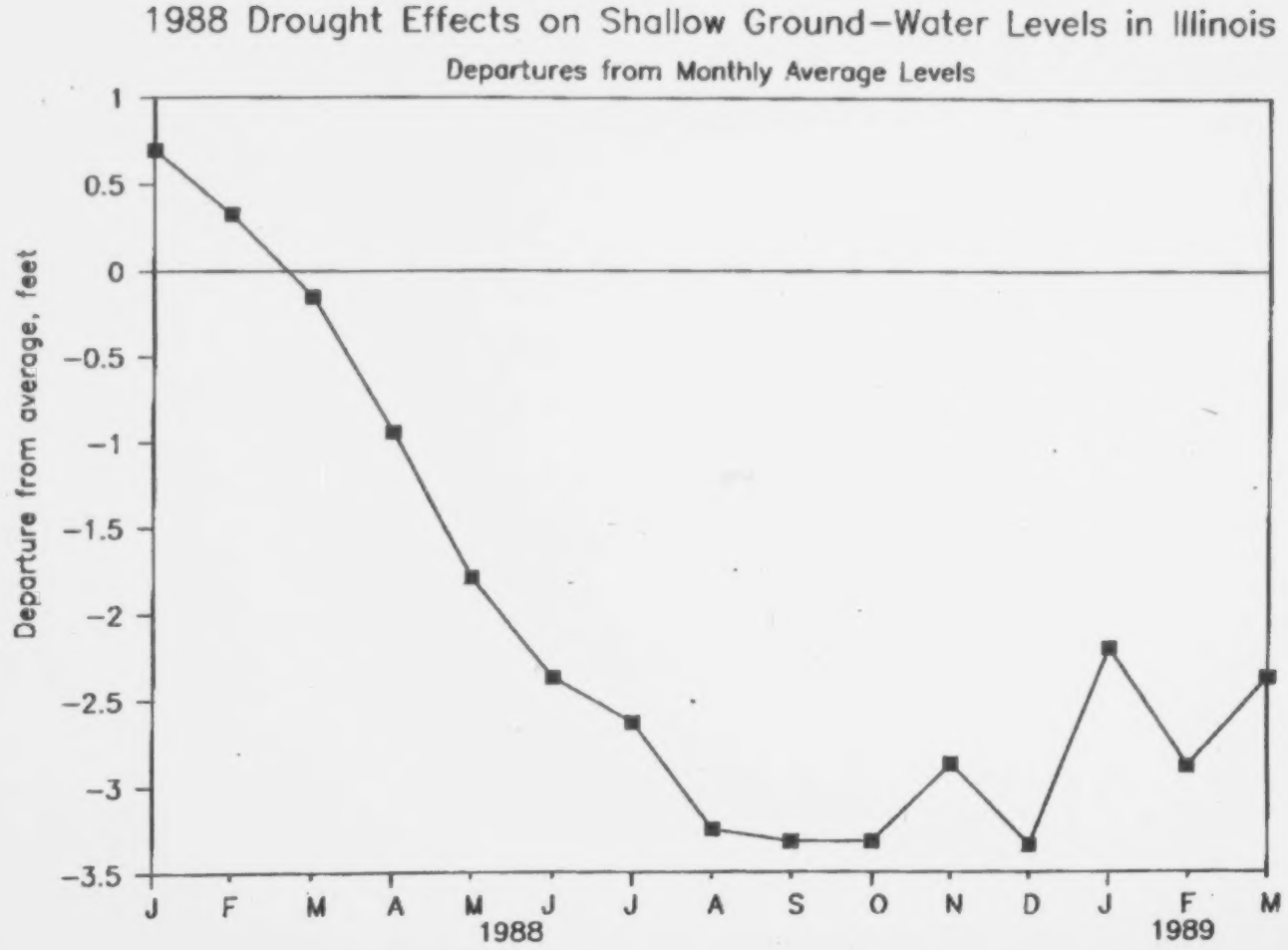
The 1988 spring-summer rainfall deficiency and accompanying high temperatures also severely impacted surface water conditions in and adjacent to Illinois. By early summer, the water levels and flow rates of the Missouri-Mississippi-Ohio River system approached their lowest values for that time of year for many decades. They stayed that way throughout the summer, which severely impacted the barge transportation of agricultural and other commodities. The levels and flows of many Illinois rivers and streams also reached record low levels by August 1988. This situation led to substantial drawdowns of many Illinois lakes, including those that constitute the water supplies for important cities such as Decatur, Bloomington, and Springfield. The water supplies to some of these cities were accordingly severely imperilled by late summer. The foregoing climate situation also contributed to the pronounced decline in the level of Lake Michigan that has occurred since the late winter of 1987. That decline has lowered Lake Michigan from record high levels to average values for the calendar month concerned, a decline that was much faster than was generally anticipated. In fact, by mid-summer 1988, Lake Michigan was lower than it had been for more than a decade. By March 1989, the level had dropped further to slightly below the average March level for 1900-87. Although winter precipitation has raised lake, river, and stream levels across much of Illinois, and especially in the southern third of the state, from the low values of last summer, very serious low flow conditions still persist in western and central Illinois. River flows in these regions are far below average and will require substantial rainfall in their watersheds for several months to be restored to normal.

The shallow ground water levels across Illinois also declined precipitously in parallel with the pronounced 1988 spring-summer precipitation deficiency. This is graphically illustrated in the diagram that follows this testimony. By August 1988, the average level of shallow ground water for 21 monitoring wells across the state was about 4 feet lower than in January 1988. At almost three quarters of those monitoring wells, the August level was the lowest on record for that calendar month. As the accompanying diagram indicates, the shallow ground water levels across Illinois have recovered only slightly since last August. From the shallow ground water standpoint, the present situation is thus much worse than at the same time last year. Shallow ground water supplies more than 90% of the water needs of rural Illinois. A continuation of the present level of precipitation deficiency for several years would reduce the water supply from the deeper aquifers on which many Illinois cities depend.

Climate (and especially precipitation) fluctuations can thus profoundly impact the water resources of the Midwest. It is important to realize that the recovery from the present unfavorable situation will take substantial time, and will vary between the components of the hydrological cycle. The recharging of soil water should be expected to occur first, although this will likely be

delayed by the high plant-water demands of the imminent growing season. Once the soil water levels reach saturation, the base flow to rivers, streams, and lakes will be enhanced. This would yield a prolonged improvement in the flows and levels of those water bodies, as opposed to the sporadic and short-term improvements that have resulted from isolated precipitation events during the past year. The last component of the hydrological cycle to register an improvement will be the shallow ground water. It will likely take many, many months of above average precipitation to restore Illinois' shallow ground water levels to those characteristic of January 1988.

The foregoing situation requires that there be a continuing effort to improve water catchment, conservation, storage, and delivery. This should be accompanied by measures that protect and enhance water quality. There is a clear need for Federal government policy to be sufficiently flexible to support these necessary developments. Water will become an increasingly precious commodity.


1988 Drought Effects on Shallow Ground-Water Levels in Illinois
Departures from Monthly Average Levels
Departure from average, feet
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
-3.5
J
F
M
A
M
J
J
A
S
O
N
D
J
F
M
1988
1989

VI. BIOGRAPHICAL SKETCHES

PETER J. LAMB -- PRINCIPAL INVESTIGATOR

Peter J. Lamb received Bachelors (1969) and Masters (1971) degrees from the University of Canterbury (New Zealand), and the Ph.D. in Meteorology from the University of Wisconsin in 1976. He has taught atmospheric science at the Universities of Canterbury and Adelaide (Australia), and been a Research Associate in the Department of Meteorology at the University of Wisconsin and at the Cooperative Institute for Marine and Atmospheric Studies of the University of Miami. He supervised several Masters theses at the University of Adelaide. Dr. Lamb is currently a Principal Scientist and Section Head (Climate and Meteorology) at the Illinois State Water Survey, positions he has held since September 1982 and September 1984, respectively. He joined that organization in June 1979 as a Professional Scientist. Dr. Lamb was appointed an Adjunct Associate Professor of Meteorology at the University of Illinois in January 1983, and was promoted to Adjunct Professor in June 1987. He was also appointed Adjunct Professor of Geography at Illinois in January 1988. In these capacities he regularly contributes to the teaching of an introductory course, serves on Ph.D. committees, gives departmental seminars, and is currently supervising two graduate students.

Dr. Lamb's primary research interest is in the physical and dynamical processes responsible for climate and its year-to-year fluctuations. While affiliated with the Universities of Wisconsin and Adelaide (1971-78), he was involved in substantial investigations of the long-term average surface climate and atmospheric circulation, and the hydrospheric and atmospheric heat budgets, of the tropical portions of the Atlantic, Eastern Pacific, and Indian Oceans. Other research at these institutions examined the relation between Subsaharan rainfall and the atmospheric-oceanic conditions over West Africa and the tropical Atlantic. Dr. Lamb's Miami work (1978-79) documented the annual march of the heat budget of the North and tropical Atlantic Oceans; the processes treated included the net surface heat gain, the subsurface heat storage change, and the meridional oceanic heat transport. Since joining the Illinois State Water Survey in 1979, his physical-dynamical research has focused on midwestern climatic variability, particularly the intraseasonal and interannual fluctuations characteristic of the growing season. Some of his earlier lines of inquiry (Subsaharan rainfall, oceanic heat budget) have also been continued at Illinois. Dr. Lamb's Illinois work has also dealt with the applied issue of how the products of basic physical-dynamical climate research might be used for the benefit of society. This is manifest in a number of publications, and in his recent and current NSF-funded research into the present and potential use of climate information (especially climate predictions) by U. S. agriculture.

Dr. Lamb is a Member of the American and Royal Meteorological Societies and Sigma Xi, and an Associate Member of the American Association of State Climatologists. He was elected a Fellow of the American Meteorological Society (AMS) in 1988, and became Chief Editor of its Journal of Climate in January 1989 after serving as an Associate Editor for a year. Dr. Lamb is currently a member of the AMS Committees on Climate Variations and Integrated Information and Processing Systems, and is also serving on the Global Climate Change Subcommittee of the USEPA's Science Advisory Board. He was Co-Convenor of the February 1989 Task Force Meeting on the "Development of Regional Climate Scenarios for Impact Assessment" that was held at the International Institute for Applied Systems Analysis (IIASA) in Laxenburg, Austria. His refereed publications and current research support are listed in the succeeding pages.